An Exploratory Study on the Beliefs and Practices of Teacher-Child Interactions of Selected Early Childhood Educators in Singapore

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Abstract

This study investigates teachers' beliefs and practices in terms of classroom verbal interactions with children, specifically in the area of affective and instructional interactions. The results have shown inconsistencies between teachers' beliefs about verbal interactions and their practices. The multi-source approach to data collection involves nine kindergartens and ten child care centres, with a total of thirty teacher-participants. All participants satisfy the minimum qualifications required to be accredited early childhood educators under the Preschool Qualification Accreditation Committee guidelines of 2009. Written documents, direct observations and interviews are collected as data. The findings indicate that most teachers have similar expressed beliefs, however their practices differ. Teachers' level and types of general education, prior early childhood school experiences and personal attributes have an important influence on their verbal behaviour. Classroom physical and material environment and the opportunities given to teachers to modify and adapt their lessons also make a difference to teacher-child talk. It is concluded that a higher entrant qualification could be the answer for better teacher-child interaction practices. However the individual teachers are the ones to make a difference but continuous support and encouragement are essential for sustained reflective practice. At the teacher education level, rigourous process-oriented training on instructional techniques coupled with a contextualised and practice-focused coaching model are vital for honing teacher-child interaction skills.

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DECLARATION

No part of the material offered in this thesis has previously been submitted by me for a degree in this or in any other University.

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DEDICATION

This dissertation is for educators and leaders who believe in working with passion and purpose for early childhood education.

CHAPTER 1

INTRODUCTION

Josef Albers, wrote that *"Good teaching is more a giving of right questions than a giving of right answers".* Yet good teaching goes beyond even giving the right questions. The National Association for the Education of Young Children (NAEYC) has provided a framework for best practices which is grounded in research on child development and learning (Copple and Bredekamp, 2009). This framework, known as Developmentally Appropriate Practice (DAP), places the teacher at the heart of children's learning experiences. The teacher is said to possess a repertoire of skills and strategies from which he or she chooses for the purpose of meeting the learning needs of individual and groups of children. One of the skills and strategies is using effective teacher-child verbal interactions. This study hopes to find out the professed beliefs and observed practices of teachers' verbal behaviour in a small group of kindergarten and child care teachers in Singapore. The underlying reasons for teachers' practices will help us understand the contexts and circumstances which teachers have to face and uncover possible future developments in teacher training programmes. This chapter highlights the reasons for this research project and the importance of teacher-child interactions in relation to learning outcomes. The context for the research is explained and the historical developments of the Singapore early childhood education scene, as well as its teacher characteristics are elaborated.

1.1 Background of the study

The impetus for this research project has informal beginnings a decade ago. From a teacher-educator's perspective, the image of teacher-talk is amazing, but a recurring question of, "Why teachers' practices are incompatible with theoretical exposition?" is being asked. I shared with Massey's (2004) observations that teacher-talk lack rich and stimulating content. Interaction appeared contradictory to the desired standard for quality care and education. Discourse and reflective writings of in-service students whom I encountered are often about the impracticalities of theories, how parents and school leadership are different from the ideal; and how the Singapore education system is different from the West, where all early childhood training ideas and materials are developed. In summary, there are many challenging dichotomies about theory-to-practice, beliefs and practices. Among the many possible studies, my area of special interest and curiosity is teacher-child interactions in the classroom.

1.2 The issues related to outcomes for young children

Positive outcomes for young children are related to educators' active involvement in supporting development and learning. Overall classroom quality has also been found to be related to the frequency of involvement and the types of involvement of educators (Howes and Smith,1995; Howes, Phillips and Whitebook, 1992 cited in Kugelmass and Ross-Bernstein, 2000). Quality in care converges around the relationship between adults and children, and teacher-child interactions are essential to this relationship (Kugelmass and Bernstein, 2000).

The importance of educators' verbal interactions with children can never be over emphasised. Vygotsky's works (Vygotsky, 1978; MOE, 2003) resonate that speech with accompanying and corresponding actions are fundamental for the young child who is learning to perform a given task. This is because both speech and actions are part of the same psychological function for the child. Furthermore, a child's verbal appeals to a peer or an adult are indications that the child is formulating a plan to solve a given task. Gillies (2006) puts it plainly that verbal interactions are a "catalyst" for thinking and the dialogues and verbal exchanges enhance children's cognitive development. Another significant dimension of verbal interaction is that it helps the child function beyond his/her mental age of development (Vygotsky, 1978). Thus an educator's verbal interaction is necessary to bring the child out of his/her zone of proximal development (ZPD). The ZPD indicates what the child is able to do with guidance and assistance versus actual development which the child can achieve independently. Therefore the role of the educator is to ignite the child's thinking and cognitive development through active involvement in the child's day. This involvement is different from the Piagetian perspective which focuses mainly on the provision of a material-rich learning environment. The Vygotskian perspective is one that is rich in teacher-child interactions in general and more specifically verbal interactions. Mercer's (1996) argument is that talk is more than sharing ideas. It is a 'social mode of thinking' for co-construction of knowledge by educators and children. Furthermore, Webb (2009) concurred that educators wield considerable influences on the child's discourses and behaviours.

In a recent study by Mashburn and Pianta (2010) a Bioecological Model of Development framework was adopted to explore teacher-child interactions. It was found that the quality of children's interactions with adults and physical resources in classrooms have an important influence on their learning and development. Hence the importance of teacher-child interactions cannot be under-estimated.

1.3 Importance of the study

In general, research has pointed to quality early childhood education to be exceedingly important for the formative years of young children, as it lays the foundation for future learning and development; character formation and social behaviour (Feeney, Christensen and Moravcik, 2010; Tan, 2007). For Bowlby (1969), predictable adult-child interactions are essential for the development of positive secure emotions which are the basis of children's well-being. Bowman, Donovan and Burns (2001) said more specifically that children's foundational learning of language and social competence takes place when interactive experiences are available and that the quality of teacher-child interactions matters. Increasingly more children are placed in centre-based care, which results in them spending more time with their teachers than parents. Educators' beliefs, values and professional roles, play a key influence on children's early experiences and learning (Hsueh and Barton (2005). It is said that everything that goes on in the classroom comprises of interactions, thus this aspect of teaching has a significant impact on outcomes for young children placed in institutional settings. In concurrence with Dobinson's (2001) interpretation of interactions, being verbal

communication between the educator and the students, this study will focus on teacher-child verbal communication.

1.4 Rationale of the study

There are several studies to show that educators' beliefs do influence decision making in the classroom (Torff and Warburton, 2005) and how practices are adapted (Clark and Peterson, 1986). In contrast, Wilcox-Herzog and Ward (2004) have found that there is a disparity between scholars' view of what educators should be doing and what educators actually do in the classroom. This is an important discourse for educators as evidence of 'personal practical knowledge' have been documented by Miller (1991) and Spodek (1988).

Thus, this study not only seeks to investigate the professed beliefs of educators about teacher-child verbal interactions, but is also to document observed verbal behaviour and practices. In addition, it questions the differences between professed beliefs and actions. Finally, the study will explore the reasons for the differences between professed beliefs and actual behaviours and practices.

Pajares (1992) showed that research on teacher beliefs and teacher practices in general education is extensive. There is however some paucity for early childhood education and there is a lack of evidence in the area of teacher-child verbal interaction focusing on early childhood educators and children in the Singapore context in particular. This study will help open doors for further investigation in this sphere of teaching.

1.5 Research context

The project will involve settings comprising children aged four and five years old. This specific age group was selected because of the general concern about school readiness. Such concerns led the Singapore Ministry of Education (MOE) to initiate a framework in 2007 to enhance school readiness for pre-school aged children (Tan, 2007). The Classroom Practice Inventory (CPI) study by Hyson, Hirsh-Pasek and Reseerla (1990) was also carried out with this age group.

Schools and educators invited to join the project needed to be representative of the majority of the schools profile in Singapore, the lower to middle socio-economic group. Diploma trained educators were selected as educator characteristics such as education and professional specialised training (Wilcox-Herzog and Ward, 2004) are believed to exert an influence on beliefs about practice and actions in the classroom.

1.6 Definitions and terminologies

Key words in this thesis are: beliefs, practice(s), verbal interactions and early childhood settings.

According to the Cobuild English and Longman Dictionary, beliefs are strong opinions or feelings of certainty that something is true, good or right. Frank Pajares (1992) said that 'defining beliefs are at best a game of player's choice'. They are disguised and often under alias such as attitudes, values, judgments, opinions, ideology, perceptions, dispositions, personal theories and internal mental processes. In McMullen (1998), belief is narrowed down to, "teachers' beliefs about how children learn and about themselves as teachers". For this study, the focus is on educators'

beliefs about teacher-child verbal interactions, which is defined as personal views and philosophy about one's interactions with children in early childhood settings.

Practice in this study is defined as the observable elements of words and actions of educators. The observed practice will be limited to the indoor physical environment of early childhood settings.

Cobuild English Dictionary indicates that interaction has the element of communication as people spend time together. This implies that there is sharing or exchanging of information, ideas or feelings. According to the Longman Dictionary, "when people interact they talk to each other and understand each other". Thus in the classroom context, teacher-child interaction is defined as the verbal transaction (conversation) between educators and children. This is also similar to interpretations from language educators of the western world, where they define interactions as verbal communication between teachers and students (Dobinson, 2001). Whitebread (2003) indicates that a certain style of interaction between adults and children are found to be beneficial to learning. He calls it the "dialogue between adults and children in which there is co-construction of meanings" (p. 5). In this paper, the terms conversation, dialogue, teacher-talk and verbal behaviour will be used interchangeably.

Instead of the term pre-school, commonly used in the Singapore context, this paper will sometimes use 'early childhood settings'. The term pre-school carries the connotation of preparatory years before formal or compulsory schooling (Katz, 1995). Early childhood settings encompass all programmes for children right up to eight years old. In Singapore this term refers to child care centres and kindergartens which cater for children from 24 months to six years old (UNESCO-IBE, 2006).

1.7 Early childhood education in Singapore

In a natural resource impoverished city-state of 704 km², human resource and an educated multi-racial workforce drives development. Hence education is highly valued (Tan, 2007) and is a governmental priority. In step with the global trend Singapore is experiencing low birth rates. As a result, several policies have been put in place to address the situation. Pro-family policies initiated in 2004 included infant-care subsidies for centre-based care, extension of maternity-leave from two months to three months for women, one-week child care leave for parents of children who are ill, and reduced tax-levy on hiring of domestic helpers to care for children at home (Tan, 2007). Apart from human resource reasons, the other long-term perspectives of early childhood education are to reduce social inequities, as a foundation for life-long learning and better success later in life, as indicated by the Perry Preschool Project (Schweinhart, Montie, Xiang, Barnett, Belfield and Nores, 2005).

The early childhood education scene in Singapore underwent several major changes since 1999 and teacher training entered a new chapter in the year 2000 (Chew-Quek, 2010). An inter-ministerial taskforce was set up to bring about a systematic training route (Chen, 2006) for early childhood educators and leaders as well as an accreditation framework for training. By 2001 a Pre-school Qualification Accreditation Committee (PQAC) was set up to recommend and monitor standards and accredits courses and trainers for certificate and diploma early childhood courses in Singapore (MOE-MCYS PQAC, 2008). To meet the demands of a highly educated parent profile and the educational needs of children in the uprising knowledge-based economy, 2009 saw new requirements in academic and professional qualifications and

language competency for early childhood educators. Raising the bar on language proficiency was brought about due to the recognition of the importance of the teacher as a language model in children's learning. All these changes meant that educators had to reassess their roles both generally and specifically in their verbal interactions with children.

Changes in curriculum and design saw the introduction of a Kindergarten Curriculum Framework (KCF) in 2003 to outline the tenets for quality kindergarten and to help ensure continuity of learning for children from one level to the next. One of the key features was the identification of desired outcome for early childhood education. It laid down the following knowledge, skills, values and dispositions children should have acquired at the end of the early childhood years before formal education begins:

1) Know what is right and what is wrong
2) Be willing to share and take turns with others
3) Be able to relate to others
4) Be curious and able to explore
5) Be able to listen and speak with understanding
6) Be comfortable and happy with themselves
7) Have developed physical co-ordination and healthy habits
8) Love their families, friends, teachers and school (MOE, 2003)

This set of desired outcomes reflect a strong commitment to developing well-rounded early childhood years with communicative skills that energise active learning. As Tan (2007) wrote, the set of desired outcomes is "deliberately formulated to demonstrate

that social and communicative skills… are of significant importance…". Thus the educator needs to provide "high levels of interaction to promote positive attitudes to learning… through both play and structured learning… " (MOE, 2003, p.10). The fifth principle of quality kindergarten curriculum cited "extensive and meaningful interactions between children and adults in a nurturing and positive environment" (MOE, 2003, p. 22) as central to children's interest to learn. Adults' conversation cited in the KCF was focused on role modelling of the correct use of language. However, it would be prudent to take a larger view of teacher-talk. Goodfellow (1996) has rightly pointed out, that in a day there can be over 1000 interpersonal interactions between educators and young children, and it is important to make the most of these interactions to support children's learning. The educator is also more than an instructor delivering knowledge. He/she is a scaffolder (Copple and Bredekamp, 2009) who supports, encourages and extends children's active search for understanding (Whitebread, 2003). Hence I prefer MacNaughten and Williams (2009) proposition as it is more encompassing. The writers suggest that interactions take place through teaching techniques. These techniques are both verbal and non-verbal and through them, children's learning is assisted, encouraged, supported and shaped.

1.8 Children and early childhood settings

For children in Singapore, formal education begins at Primary One, and it has been made compulsory for children to begin school in January of the year that the child turns seven. Education prior to Primary One is not compulsory and yet the participation rate is more than 95% for children from ages four to six years old (Tan, 2007). This

figure includes children enrolled in kindergartens and child care centres, excluding those enrolled in International Schools, Special Needs Schools, playgroups, enrichment centres home-schooling arrangements. In 2010 only 1.2% aged six years old did not attend pre-school (ST[2], 2010).

The MOE in 2010 recorded a total of 496 registered kindergartens. These kindergartens provide formalised education for children four to six years old. In the same year, there were 800 child care centres licensed by the Ministry of Community Development Youth and Sports (MCYS) which provide care and education for children below seven years old (MCYS, 2011). Early childhood education provisions in Singapore are managed by the private sector which includes community foundations, religious bodies, social organisations and business enterprises (Tan, 2007). Community foundations such as the People's Action Party Community Foundation (PCF), run 50% of registered kindergartens (ST[1], 2010) catering to the majority of children from the lower-income socio-economic strata (Tan, 2007).

All MOE registered early childhood centres commonly referred to as Kindergartens run Nursery classes for two to three hours and Kindergarten I and II classes for four hours per session. In a typical school day the Kindergartens would have two blocks of such programmes. Nursery classes are for children who turn four years old during the calendar year, Kindergarten I for children who turn five years old and Kindergarten II for children who turn six years old in the calendar year. Thus the chronological age of a child determines the level of the programme which they will be assigned to and enrolment is based on the calendar year from January 1st to December 31st. Hence at any point in time, a typical Nursery classroom setting would have some

children who are already four years old, and some still three years old but will be turning four in the calendar year. For Kindergarten I classroom settings, there would be four and five years old in the same class. Similarly, a typical Kindergarten II classroom setting would have some children who are still five years old while some would have turned six years old.

MCYS licensed child care centres operate 12 hours for each school day and the age group of children enrolled are from 18 months to six years old. With the longer hours that children spend in the child care centre, the typical programmes would focus on both care and education. In contrast, Kindergartens have a shorter programme time per school day and priority is given to core activities of just education. However, the element of care will not be excluded as the education of young children has always been integrated and holistic.

1.9 Characteristics of early childhood educators: training, values, beliefs and practices

Early childhood educators or teachers, referred to in the Singapore context, are currently expected to have attained the minimum academic and professional qualifications. In the area of general education, new regulations in 2009 required that the educator should have five credits in the General Certificate of Education (GCE) 'O' level including the English Language paper (MOE, 2010). In the area of professional specialised training, a Diploma in Early Childhood Care and Education-Teaching (DECCET) has become the norm since January 2009.

The training of the early childhood educator and quality of the field came under scrutiny in the late 1990s with the formation of the Steering Committee on Preschool Education (SCPE) led by the Senior Minister of State. The mission of SCPE was to develop a systematic framework for the overall development and regulation of the early childhood education system; the desired outcomes of early childhood education, early childhood teacher training and early childhood curriculum (UNESCO-IBR, 2006).

Training characteristics of educators in all the early childhood centres are now assumed to be similar because all training institutions for early childhood education are accredited by the Pre-school Qualification Accreditation Committee (PQAC). PQAC was set up in 2001 by the two ministerial bodies, MOE and MCYS, to assess and accredit courses in pre-school education (UNESCO-IBE, 2006).

Teachers are believed to have noble reasons for choosing teaching as their career. Ayer (2001) mentions, that teachers choose "to share their life with young people, to shape and touch the future" (p. 5), and passion is required to fulfil this calling. With reports showing that compensation and working conditions of early childhood educators in the United States are scandalously low (Katz, 1995), it cannot be assumed that the situation in Singapore is any rosier. Thus, the assumption that all participants in this study are passionate about their work with children will be made. Lortie (1975) called this deep attraction to work as teachers, the interpersonal theme. In addition, Hyson (2003) noted that early childhood educators come from different backgrounds and starting points, with their positions and responsibilities within the schools being quite varied. Personal values and beliefs of each educator may differ according to their amount of general education and prior experiences. Furthermore professional

specialised training will influence these values and beliefs when working with the children in the classroom.

Katz (1995) propounded three categories of teachers to explain the actual nature of practices among early childhood educators. Firstly, there are practices that draw on the wealth of knowledge of the underlying principles of child development. Secondly, practices that show teachers succumb to parental pressures; their understanding of what contributes to appropriate experiences; their aspirations and expectations for their children, which may not match the educators' beliefs of what is considered developmentally appropriate learning experiences. Lastly, there is the willingness and/or ability of educators to put beliefs into practice.

1.10 Summary

Several casually observed differences between theories and practices in the area of teacher-child interactions raised thoughts about the importance of and relationship between classroom verbal interactions to young children's, thinking, learning and development. Changes in the field of early childhood education in Singapore in the last two decades, mainly with the introduction of the new curriculum framework and raising the bar for teacher training for the purpose of raising the overall quality of programme again reviewed the importance of the teacher in the classroom. With the understanding of the unique characteristics of the local early childhood educators and context, inquiry into the beliefs and practices of teacher-child verbal interactions in selected early childhood settings will take place.

1.11 Overview of the thesis

Chapter 1 gives the background, rationale and context of the study. The second chapter that follows after will focus on the research literature that explains educators' beliefs, the types of teacher-child verbal interactions, issues and challenges faced by educators in the classrooms. The third chapter will explain the research methodology, the rationale for the choice of research paradigm and the design for data analysis. The fourth and fifth chapters will show the findings and discussions. The discussion chapter will rationalise the findings, the relationship between the study and past research and provide possible solutions. The concluding chapter six will contain the remarks on the outcomes of the study and implications for teacher education.

CHAPTER 2

LITERATURE REVIEW

2. Introduction

Teachers come to the classroom setting with their existing level of knowledge, beliefs and perceptions, all of which are major influences on their classroom interaction practices. This chapter will explore the literature and research on teachers' beliefs and teacher-child verbal interactions in the classrooms, describing the types of instructional interactions to be studied and some aspects of affective interactions. Issues related to teacher-child verbal interactions and the challenges of putting beliefs into practice will also be considered.

2.1 Research on teachers' beliefs

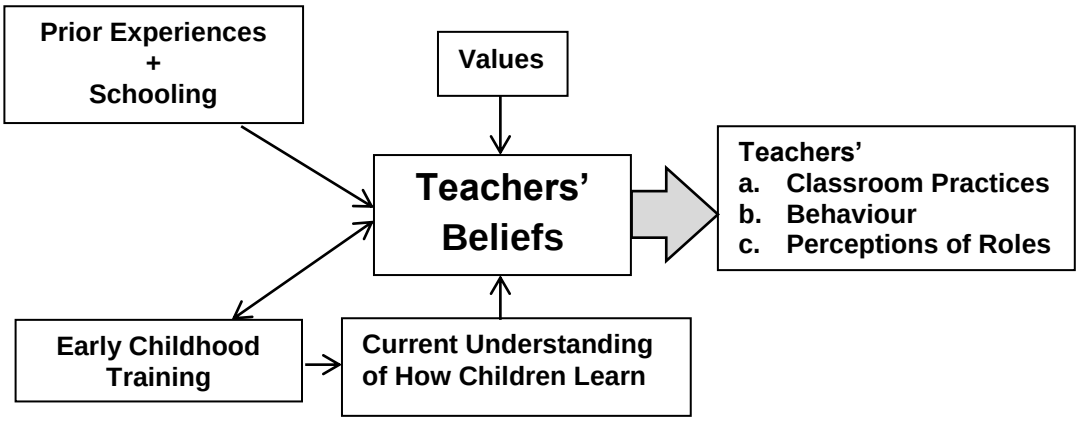
Lortie (2002) and Entwistle, Skinner, Entwistle and Orr (2000) attested that a person's personal schooling shapes his/her own beliefs. A person's prior experiences serve as filters through which subsequent learning is perceived eliciting a selection process of what is to be retained or rejected. Lortie (1975) and Goodman (1988) coined the term "intuitive screens" as a schema, argued that belief systems affect what teachers choose to accept through their new learning encounters in courses, training, and readings, and practise them in the classroom when working with children. Concurrently, Aguirre and Speer (1999) stated that beliefs shape teachers' perception and interpretations of classroom interactions and Phillips (1995) found that teachers' understanding of their roles are based on their reconstructions of memories of prior

personal experiences. In addition to the above mentioned, MacNaughton and Williams (2009) reiterated that the current understanding of how children learn and develop as well as value systems will affect a teacher's beliefs.

Although teachers' beliefs influence perception, McMullen (1998) stressed that this altered perception in turn influences their judgment and behaviour. Pajares (1992) further indicated that beliefs are a precursor of decisions and actual classroom practices. Similarly, in Aguirre and Speer's (1999) research on the relationship between teachers' beliefs, goals and practice, the influence of teachers' beliefs was again emphasised. Refer to Figure 1 below for the illustration of the cause and effect of teachers' beliefs.

Figure 1

Teachers' Beliefs



Wilcox-Herzog and Kontos (1998) and Wilcox-Herzog and Ward (2004) took a step further to link intentions to the belief-action relationship. Copple and Bredekamp (2009) emphasised that everything teachers do are intentional. Intentional teachers

articulate their rationale, define learning goals and select strategies. This relationship is represented in Figure 2, page 46.

However, Cassidy and Lawrence (2000) cited the studies conducted by Verma and Peters (1975), to illustrate the point that the relationship between teachers' stated beliefs and practices, observed in child care centres, as insignificant. Furthermore, Peled-Elhanan and Blum-Kulka (2006) found that teachers' declaration of commitment towards maintaining verbal behaviour are not matched by their observed practices. McMullen (1998), and Kontos and Dunn (1993) also affirmed this stand. In investigating teachers' attitude towards communicative approach, Karavas-Doukas (1996) attributed this difference between theory and practice to the attitude of teachers towards models of practice and approaches. However, Katz (1996) found that even though teachers have gone through similar training and instructions, and have used similar materials, their classroom practices are still different. She attributes this to the different teaching styles of teachers, which is believed to be derived from teachers' beliefs.

Hofer and Pintrich (1997) called the beliefs about knowledge that a person holds as personal epistemology. Teachers' personal epistemological beliefs about interactions with children can have objectivist or evaluativistic inclinations. Teachers with predominantly objectivist beliefs are inclined to adopt a transmissive and teacher-directed approach towards teaching (Berthelsen, Brownlee and Boulton-Lewis, 2002) as they tend to perceive knowledge as being transferred from teacher to children (Berthelsen et al., 2011). On the other hand, the constructivist and child-centered approach towards teaching is more likely to be adopted by teachers who hold

evaluativistic beliefs (Berthelsen et al., 2002). The latter group of teachers are also more inclined towards critical reflection of practice (Berhelsen et al., 2011).

The long standing assumption in education is that theory underpins best practices. However, Schoonmaker and Ryan (1996) and Williams (1996) have found that teachers, through their experiences and practices, in fact develop additional theories and beliefs. Ramani (1987) called this the hidden theory, which is a combination of teachers' mix of ideas derived over time from their own experiences and practices. Berthelsen et al., (2011) called this practical evaluativism. It is also worth noting that the Effective Provision of Pre-School Education (EPPE) project, a longitudinal study from 1997 to 2004, found early childhood educators to have weak underpinning knowledge of child development (Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I. and Taggart, B. (2004). This finding implies that a developmentally appropriate 'play' based curriculum (which requires teachers to have strong developmental knowledge of children) is not necessarily the best approach to achieve effective pedagogy. EPPE concludes that a combination of 'teaching' and instructive play activities yield better learning outcomes for children. The result of this study serves to emphasise the need to exercise flexibility in the theory to practice and practice to theory discourse.

2.2 The nature of teacher-child interactions in the classroom

According to Copple and Bredekamp (2006), teacher-child verbal interactions provide countless opportunities for learning through trial and error, decision-making and problem-solving. MacNaughton and Williams (2009) acknowledged that verbal

interactions may be very simple or last only moments and both are just as powerful in shaping and supporting children's learning. These interactive processes are labelled as teaching techniques by the authors in the book *"Techniques for teaching young children: Choices for theory and practice"* (MacNaughton and Williams, 2009). These techniques are mostly generic everyday verbal and non-verbal interactions which teachers use in one way or another without realising. The review will focus on seven out of the 14 general everyday verbal teaching techniques, namely demonstrating, describing, giving verbal feedback, questioning, recalling, suggesting and, telling and instructing. These were chosen versus the other seven (namely, encouraging, praising and helping, facilitating, grouping, listening, modelling, positioning people, reading and singing) based on two considerations. Firstly, the definition adopted for interaction is 'verbal transactions' (mentioned in p. 7). This would imply that teachers' verbal outputs are apparent and observable and they are likely to invite verbal responses from children. Secondly, where techniques have the tendency of producing overlapping purposes, as in the case of encouraging versus giving verbal feedback, the technique that has a more direct link to instructional strategy versus affective strategy will be considered. Modelling is teaching by example and children are said to have learnt when they copy the behaviour. As modelling could be intentionally or unconsciously used in any of the seven selected techniques, it will not be treated as a separate instructional interaction technique.

2.2.1 Verbal interactions

Though the focus of this paper will be solely on the verbal characteristics of interaction, it must be noted too that non-verbal interactions do contribute positively to the overall tone, texture and meaning within the teachers' daily interactions with children (MacNaughton and Williams, 2009). Other studies have chosen different terminology for teachers' verbalisations. Tu and Hsiao (2008) used terms such as 'learning guidance, information talk and follow-up statement'. These terms are useful for the analysis of teacher-talk.

Demonstrating

In this form of interaction, the teacher shows the children how to go about doing a task or how an object is to be used (Collins Cobuild, 2006; Copple and Bredekamp, 2009). It is effective when accompanied with short but clear verbal steps for new encounters, refreshing previous learning or to enhance a skill. Children learn new skills through two modes. Listening to instructions and watching corresponding steps; after which they will imitate the steps physically till completion. The more practice children have, the more competent they become. The above technique is used extensively in the Montessori Approach. The Montessori Directress models the correct manner of using new materials by demonstrating each step to the children. At the pre-operational stage of children's development, the use of 'concrete materials' aid thinking and cognition (Copple and Bredekamp, 2009).

Describing

According to the Longman Dictionary (1995), describing involves words and details. The 'what is something like and what is happening' to people, events, things, situations or issues make up descriptions (Collins Cobuild, 2006; Hogg and Foster, 1973 cited in MacNaughton and Williams, 2009). This is similar to 'information talk' used by Tu and Hsiao (2008) mentioned previously.

By using language to describe to children what is happening or who is involved, characteristics and features are formed by them even though they may not have the language to describe it themselves (MacNaughton and Williams, 2009). The teacher's input which can be in the form of adjectives or phrases describing children's actions provide trigger for children's 'why' and 'what' questions to emerge when the opportunity for interacting is present. Descriptions aid the process of developing understanding (Allen and Hart, 1984 cited in MacNaughton and Williams, 2009), as it brings to attention and creates awareness of characteristics of particular things. Visual aids and life items that accompany the description enhance children's ability to comprehend the verbal input. In addition, repeated concrete exposures over time aid children to acquire the vocabulary and they bring to include these words into their 'conversations' with their peers and the teacher.

Giving verbal feedback

Verbal feedback is spoken feedback in the form of explicit and reliable description of 'what is happening' or 'what has happened'. It can be about an event, a relationship or features of a task or behaviour, which is somewhat similar to Tu and

Hsiao's (2008) 'follow-up statements'. Through this form of feedback, the children's actions or words are described objectively. When given in context and following a particular behaviour it helps them learn from their experiences (Seefeldt, 1980). Neutral descriptions or comments during a task notify children if what they are doing is correct, enable them to self-evaluate. If given timely, the verbal feedback can encourage children to continue with their current approach or explore alternative ways of approaching a particular task because they are encouraged and feel confident to repeat the desired behaviour or explore new ways of doing the same task. An example of a feedback used during discussion time is, "Kayla, I like the way you sit with your legs crossed because you have given space to the other children around you and will not kick them."

Feedback is often easily confused with praise and encouragement. According to MacNaugthon and Williams (2009), praise is a form of giving approval for an act that is completed. Thus with reference to the above example, the teacher in praising Kayla would say, "Well done Kayla". Encouragement on the other hand is given when the child is in the process of the act, and in appreciation of the effort, the teacher can say, "Kayla, it is nice of you to cross your legs this way."

While praise is a form of reward and approval given to children without teaching them how and what to do; an encouragement is acknowledging a positive action while it takes place allowing children to realise that what they are doing is correct and promoting the action. Feedback however goes deeper into the act. According to Penn (2000), it supports the development of self-concept in children like Kayla, and in this scenario helps her understand that she is a positive contributor to the needs of the other

children (having more space to sit) and is helping the teacher carry on with the story (Matthews, Lieven and Tomasello, 2007 cited in MacNaughton and Williams, 2009). Hence using the example of Kayla, in giving verbal feedback, the teacher can say, “I see that Kayla is giving space to other children to sit by crossing her legs. Well, now that everyone is sitting nicely, we can enjoy the story”. Copple and Bredekamp (2009) felt that excellent teachers do use verbal feedback as a teaching strategy.

Questioning

Questioning is the use of words to draw information from another person or to seek a response. In the classroom, direct questioning serves to place the teacher to be in control of the discussion (Carlsen, 1991). A skilful and knowledgeable teacher can use questions with the intention to instruct as well as instil higher order thinking (Carlsen, 1991). The teacher-child question and answer exchange, where each answer from the child informs the teacher of his/her next question to ask in a process that allows the teacher to manipulate the discourse according to the objective of the lesson. It is not only very versatile and important but also a common form of verbal interaction. It is a teaching technique used across domains, skills and areas of learning, including literacy, science and mathematics. However, there are several levels or developmentally appropriate and styles of questioning. The benefit is dependent on how skilful the teacher is in using this seemingly simple technique.

Open and closed questioning require different amount of thinking. For example looking back into the past or going beyond current knowledge which requires children to

use different repertoires of languages to express themselves. It also gives children the opportunity to think and use language to craft a response.

Closed questions usually invite short answers from children; answers that require recalling of facts of an event, or experience or what they have been told by the teacher or other adults. In such situations the questioner should already know the answers to the question asked. As closed questions are diagnostic tools to help the teacher assess the level of children's knowledge and what they remembered from previous lessons the purpose is to guide the direction the teacher is to take based on the understanding of children's current knowledge (Turney, 1985; Tizard and Hughes,1984; Parker and Hurry, 2007 cited in MacNaughton and Williams, 2009). In Parker and Hurry's study of 51 primary school classrooms in the United Kingdom, it was found that 60% of the questions used by teachers were closed questions. This is of concern as closed questions do not have a powerful impact on children's learning. They do not help children create ideas and imagine the unknown, apart from what they already know. Closed questions have the high potential of inviting chorus or reactive answers such as, a 'yes or no' and does not require much cognitive processing before utterance.

Open questions or thought questions as coined by Seefeldt (1980) allows children to share their understanding, thinking, feelings or beliefs about people and events. There are no standard answers but many possibilities. They encourage children to stretch their imaginations and make use of problem solving skills.

In the category of open questions there are several sub-categories (Webb, 2009). Comprehension questions such as, "What was the problem with John this morning?" help children think about the situation. This is also known as reflecting in

adults' terminology. A strategic or problem-solving question such as, "Why was Ms Ann not able to stop John from crying this morning?", prompts children to give an explanation in order for a solution to surface. Connection questions such as, "Why was it possible for Ms Ann to stop Peter from crying by giving him a sweet, even though it did not work for John today?", prompt children to make comparisons and see the similarities and differences of both scenarios (Webb, 2009).

However, it is not to recommend that all questions asked are to be open questions. Closed questions do have a place in teachers' verbal interaction if used optimally. When interacting with younger children, closed questions are more likely to be used. For older children, closed questions can serve as starter questions for a new topic and once they become aware of the focus of discussion, open questions should take centre stage.

Since questioning is such a significant component in teachers' verbal interaction, their questioning techniques and styles have to be examined. According to Cazden (2001), the teacher's questioning practices can either inhibit or invite participation in the classroom. Webb (2009) elaborates on the recitation-style discourse which Nystrand and Gamoran (1990) describe as questions and answers that come in a rapid-fire sequence which do not allow for students to pause, think and respond. Such questions are according to Graesser and Person (1994), low-level questions involving recall of facts, rules and procedures. Nonetheless, the younger the children, the more direct each question should be. "What is the name of your dog?" a short and clear question as compared to an to indirect questions or what I call 'filling in the blank' questions such as, "The name of your dog is ..." The wait time for an answer is also dependent on the

age of the children and the purpose of the discussion. Turney (1985) cited in MacNaughton and Williams (2009), warned against poor questioning techniques such as: repeating ones question till the children give a desired answer. This is because, children may not understand the question or the topic may not be of their interest. Repeating the answer that children give is also not advisable as a lot of time is taken up on the same issue during the discussion allocated time. Answering one's own question instead of waiting for the children to give an answer, rephrasing the question, or using prompts, rob them of the opportunity to participate. Teachers must be aware that children take a little longer than adults to verbalise their thoughts. Furthermore, asking questions that elicit chorus answers do not encourage children to pause and think, but only allow them to go through the motion of verbalising.

It is confusing for young children to be asked double-barrelled questions such as, "What is the name of your dog and can you name its breed?" Children normally hear the latter part of the question and thus they tend to only give the answer required to that part of the question.

In terms of style of questioning, asking older children 'not questions' help build up their metacognitive skills. This includes questions such as, "What are the animals that do not meow?" Questions that can also excite children includes one beginning with, "What if …"; "Do you know of an … "; "How did … " Other possible types of questions include reflective questions, such as, "What do you think of …"; How do you know …"; "Is there anything else that …". All of the above help make questioning an interactive dialogic teaching technique which provides healthy negotiations and springboards for

inquiry in the classroom. However, the type and style of questioning technique used in the classroom is dependent on the teachers' beliefs (Webb, 2009).

Recalling

Recalling involves bringing back memories of one's recent experiences, familiar events and areas of interest. How much children can recall is dependent on how recent the event has been, how concrete or meaningful, how enjoyable the experiences was and how much practice children have with that particular experience. Children in the pre-operational stage of development remember things better if they have been directly involved (Copple and Bredekemp, 2009).

Recalling is critical to many facets of learning, such as problem solving, making associations and use of language. Through the use of open-ended and process-oriented questions, children are invited to describe their recollections of what, how and when it happened. Children can also respond verbally, through drawing, writing or by making models.

This form of verbal interaction helps reinforce ideas and knowledge and reinforcing memory is important for literacy development. Children review learning and express themselves through the use of language during sharing sessions. The teacher, in providing the labels for children as they recollect or by recasting the description, builds the children's vocabulary and expressive language.

Suggesting

Suggesting is defined as the offering of advice, ideas or recommendations, with the view that it is better, more interesting and feasible. It is quite similar to open-ended questioning and verbal feedback. Suggestions are positive, directly or indirectly phrased and spoken one at a time in order to give children time to test out ideas. They should be given appropriately, according to each individual child's needs. This 'follow-up statement' technique allows children to follow the advice, ideas or recommendations given.

Although suggesting is more adult directed it is found to be essential in engaging children's participation (Plowman and Stephen, 2007 cited in MacNaughton and Williams, 2009). Suggestions give children the choice to accept, ignore or modify the teacher's original ideas. If a choice is not given then it would amount to telling and instructing, which may be the case when safety of children cannot be compromised. Positive suggestions work best as negative suggestions can build up resistance over time. At the same time, direct suggestions such as, "Let's do it this way for a change" are more likely to be taken up. One suggestion should be given at a time as children require time to work through the information mentally before moving on to try out the ideas presented by the teacher. A suggestion may be accompanied by verbal feedback, such as, "The idea of throwing the ball in this direction is really unsafe, as there are toddlers playing nearby. How about going to another corner for your ball game?"

The advantage of using suggestions is that it gives the teacher things to talk about which benefits children's language development (Honig, 2007). Teachers, in

getting children to think about alternate possibilities help them discover new methods of getting something done, redirect children's attention to refocus on salient tasks and help in their relationship with others when suggesting ways of resolving conflicts (Ahn, 2005 cited in MacNaughton and Williams, 2009).

The study by Hughes and Westgate (1997) highlighted the importance of informed and positive adult-child talk as well as the shared control of the conversation. When teachers model talks that give rise to more opportunities for children to respond in a variety of ways, to the topic of discussions, and the adult reciprocate to build up the discussion, the teacher is perceived to be scaffolding children's language and communicative development.

Telling and instructing

Telling can be defined as passing information and telling children what to do and how to do a task; instructing is stating steps to achieve an outcomes (Linfield and Warwick, 2003 cited in Whitebread, 2003). Telling and instructing is analogous to directing. It does not give children choices, but is a form of 'learning guidance' (Tu and Hsiao, 2008) through which the teacher sets procedures and expectations. Although they are teacher-directed and a form of one-way communication that do not require verbal participation from children, there are benefits for using this approach. It is found that both teaching and instructing help improve academic achievements and school-readiness (Banks, 2001 cited in MacNaughton and Williams, 2009), and to yield better outcomes in standardised tests (Ros-Voseles and Fowler-Haughey, 2007).

Webb (2009) considered giving direct instruction as relevant because content laden instructions help to ensure children's discussions stay relevant. Although his research was carried out with older children, the essence of his idea is still relevant for younger children when applied in a developmentally appropriate manner. Another significant use of this technique is the informing and explaining of social rules and behaviours to prevent infringement on social norms or moral and ethical conventions.

Telling and instructing are important in a child's day, as new encounters require him/her to seek direction, to understand how to use certain tools or what to do when the routines are disrupted by new events. Even simple tasks like looking for the toilet in a new environment are common. Due to health and safety reasons, when children are required to follow through or when their needs are urgent and there is little room for compromise, instructions are important.

Seefeldt (1980) contended that the telling and instructing technique is but a 'chalk and talk' approach to teaching and is associated with direct instruction given to children. Gillies (2006) labelled this approach as teacher controlled. Such a teaching technique is contradictory to NAEYC guidelines for a child-centred approach. The NAEYC developmentally appropriate practice (DAP) encourages teachers to talk with the children by speaking clearly listening and responding. This is done through engaging the children in two-way conversations about real experiences, projects and current events to encourage discussion. Telling and instructing reduces creativity, as children are given the impression that there is only one appropriate way of approaching a task. Ros-Voseles and Fowler-Haughey (2007) believed that over reliance on direct instructions damage children's development of desirable social and intellectual

dispositions. Social dispositions include “the tendency to be accepting, friendly, empathetic, generous or cooperative” (Katz and McClellan, 1997, p.7) while intellectual dispositions include “making and checking predictions, solving problems or surmising about cause-and effect relationships” (Ros-Voseles and Fowler-Haughey, 2007, p.2).

Direct instruction has been a topic of debate, as it can be argued that it stifles creativity and discourages social and emotional development of young children (MacNaugthon and Williams, 2009). While it may seem to be developmentally inappropriate, it could be argued that this technique has its place in the classroom. It should be used sparingly for very young children who are yet to be verbal and have a continual need to listen to the human voice. Where children do not have the skill to manoeuvre complex gadgets but are generally very curious and display the need to know, showing and telling them how to use the gadgets actually engage them in meaningful learning. Once the teacher engages children verbally and they are able to master the basic skills, they are then on the way to self-discovery. Despite the above mentioned benefits of direct instructions, other techniques such as describing, giving verbal feedback and suggesting have to be weaved into the conversation with these very young children in a natural way, so that they will be exposed to a language-rich environment.

While it is known that instructional interactions through the use of telling and instructing technique can help to maintain activities in the classroom (Gillies, 2006), for it to benefit children, teachers need to heed Garhart Mooney’s (2005) advice. Teachers have to engage children, use clear and uncluttered language with simple and familiar words within children’s repertoire of vocabulary. Examples have to be given to illustrate

the points made and feedback from children is used to monitor children's understanding.

2.2.2 Affective interaction and instructional interactions

Mashburn and Pianta (2010) contended that the quality of interactions that children experience in the classroom has a direct impact on their learning outcomes. In the study by Hamre, Pianta, Mashburn and Downer (2007) three distinct domains of interaction which have empirical support are utilised. They are the emotional, instructional and organisational domains which categorise and conceptualise classroom interactions from pre-school to elementary years. A comparison of these three sets of interaction criteria (from different sources) yields some overlapping concepts and criteria, as shown in Table 2.1.

The High/Scope Preschool Program Quality Assessment (PQA) and Mashburn and Pianta's criteria share similarities in the emotional or affective interaction indicators, while the seven teaching techniques adapted from MacNaughton and Williams (2009), and described in the preceding pages, are more similar to the instructional interactions category of Mashburn and Pianta.

The High/Scope Preschool PQA criteria are even more comparable to the dimensions of the Beliefs-intentions Scale developed by Wilcox-Herzog and Wards (2004) to measure teacher-child interactions. The only difference lies in how the elements are classified, with the High/Scope Preschool PQA (2003) using more general descriptions of observable behaviour. On the other hand, the Beliefs-intention Scale has three succinct clusters, with thirty-seven detailed items in tow.

Table 2.1
Comparison of Three Different Sets of Interaction Criteria

(A) Mashburn & Pianta (2010) CLASS observational tools	(B) Adapted from High/Scope Preschool Program Quality Assessment criteria (2003)	(C) Adapted from MacNaughton & Williams (2009)	(D) Belief-intention Scale by Wilcox-Herzog & Ward (2004)
Emotional Interactions	**III Adult-child Interactions /** ***Affective Interactions***		
1. Positive emotional tone 2. Lack of expressed negativity 3. Sensitivity to students' emotional and instructional needs 4. High regard placed on students' interests, motivations and points of view	III (B) Children's separation from home and daily entry to the programme are handled with sensitivity and respect III (C) Adults create a warm and caring atmosphere for children III (F) Adults participate as partners in children's play III (G) Adults encourage children's learning initiatives throughout the day (both indoors and outdoors). III (H) Adults support and extend children's ideas and learning during group times. III (J) Adults acknowledge individual children's accomplishments III (K) Adults encourage children to interact with and turn to one another for assistance throughout the day.		Sensitivity of interactions with children
Instructional interactions		**Teaching Techniques /** ***'Instructional Interactions'***	
1. Promote higher order thinking vs. fact-based learning 2. Feedback that expand learning and understanding rather than correctness of responses 3. Frequent usage of language and language stimulation techniques	III (D) Adults use a variety of strategies to encourage and support children's language and communication III (E) Adults use a variety of strategies to support classroom communication with children whose primary language is not English	1. Questioning a. Open b. Closed 2. Giving Verbal Feedback 3. Demonstrating 4. Describing 5. Suggesting 6. Recalling 7. Telling and instructing	Verbal and non-verbal interactions with children
Organisational Interactions			
1 Effectively manage children's behaviour	III (M) Adults involve children in resolving conflicts		Play Style Adopted when interacting with children
2. Effectively manage time and routines to maximize learning opportunities	III (A) Children's basic physical needs are met III (L) Children have opportunities to solve problems with materials and do things for themselves.		
3. Effectively manage instructional activities and materials	III (I) Adults provide opportunities for children to explore and use materials at their own developmental level and pace.		

They are mainly:

1. Sensitivity of interactions with children (which includes warmth displayed by teachers' interactions and quality of communication, enthusiasm and extent of the involvement)
2. Verbal and nonverbal interactions with children
3. Play style adopted when interacting with children

2.2.3 Issues related to interactions

Although there have been several studies on teacher-child interactions, they all vary in purpose and context. Verbal interactions discussed so far can take place during large and small group activity time, in indoor or outdoor settings, structured or unstructured environment and at any time of the day. These are, learning formats which are used effectively and intentionally for different purposes (Copple and Bredekamp, 2006). Lind (2000) considered three types of learning conditions where learning of concepts takes place for young children. The first being formal or structured learning experiences where the lesson is pre-planned. Secondly, informal or unstructured learning experiences which are teacher-initiated to engage children in naturalistic experiences contextualised according to the teacher's plans for the children. Thirdly, incidental or child-initiated naturalistic experiences can happen at any time of the day. The combination of learning formats and conditions will differ from school to school and the schedule of the day for early childhood settings can also differ according to the curricular approaches and models of practices adopted.

Studies in the United States revealed that the quality of child-teacher interactions to be mediocre (Mashburn and Pianta, 2010). These large scale studies involved thousands of early childhood classrooms and utilised different instruments including the Caregiver Interaction Scale (CIS), the Classroom Assessment Scoring Scale (CLASS) and the Early Childhood Environment Rating Scale-Revised (ECERS-R). Each of the instruments has a different emphasis, but all look at quality of teacher-child interactions.

Wilcox-Herzog and Ward (2004) however, described teachers' verbal interactions from more than one perspective. Firstly, they looked at the quantity of talk (how much talk) and secondly the quality of talk (the things that transpire between teachers and children. Quality of talk is dependent on the types of utterances from the teacher. It has been found that where suggestions, open questions and elaborations are used, children tend to perform with higher levels of social and cognitive abilities (Erwin, Carpenter, and Kontos, 1993). Quality of talk is also dependent on the focus of the conversation.

Spodek and Saracho (1994) mentioned that in the classrooms, conversations can firstly focus on the things and events immediately available, and thus, relate to the activities carried out or the materials used by children or the topic of discussion. Next, the teachers can move on to objects and events not immediate in time and space. For example, when children are playing in the blocks corner, the teacher may refer to trips to the supermarket and de-contextualise the conversation. In so doing, dialogue and learning are expanded.

Next, in the literature on teacher characteristics, Mashburn and Pianta (2010), viewed educational level and types of training and professional development as

important factors affecting the quality of interactions in the classroom. Other factors found in the school that have an impact are class-size, teacher-child ratio and the curriculum. With a more favourable teacher to child ratio, there is more time for the teacher to engage directly with each individual children.

Turning to the nature of interactions, in an observational study with pre-school children, Pellegrini and Blatchford (2000) described the common teacher classroom behaviour as the 'task teach' type, where there is communication of facts, ideas or concepts by explaining, demonstrating, questioning or suggesting. Suggesting is found to be a very work-oriented nature of classrooms; concerned with basic areas of writing, reading and mathematics. Reasons given for such behaviours focused on educational and curriculum policies and teachers' goals.

Further insights are discussed in Hertz-Lazrowitz and Shachar's (1990) work where they found that teacher-talk are more caring and personal during cooperative learning as compared to large group or whole class instruction time, where the teacher was authoritarian and impersonal. This study is further supported by Gillies' (2006) study on the cooperative group model versus the group work model. In large group teaching, teachers are in control and children are expected to be listening and respond only when questions are posed (Rojas-Drummond and Mercer, 2003). However, adults and children generally do not carry out conversations fairly. According to Peled-Elhanan and Blum-Kulka (2006), such a relationship is due to the age and knowledge disparity between the two groups, giving the adults power and privilege. Without intervention, the way lessons are implemented will be largely determined by adults' authority. Hence similar to Berthelsen et al., (2002) findings, the beliefs of adults are

key determinant of whether there will be dialogue in the interaction, or just monologues. When adults hold a different set of attitudes towards the profession in general, and specifically towards teaching, learning and knowledge, they tend to make deliberate attempts to hold back their knowledge and give children the opportunity to express and contribute to the discourse, thus blurring the inequality (Peled-Elhanan and Blum-Kulka (2006).

Similarly, Hughes and Westgate (1997) found that where adults' perception of their role in the setting is 'teacherly' versus the 'supportive' style of interaction, the initiation and responding role of the children differed.

Conversely, Kontos and Dunn (1993) found that in child care settings, verbal interactions between teachers and children are mostly related to behaviour guidance. Furthermore, the contexts in which these interactions take place differ. When there is free play with supporting variety of materials, the interaction will be more elaborate and divergent. This is similar to Hughes and Westgate (1997) study which found that conversations between adults and children that take place in a more informal setting, children have shared conduct of discourse. Interestingly, Kontos and Dunn (1993) concluded that the quality of talk has little relationship with teachers' professed beliefs about developmentally appropriate practices, but are more closely related to the overall quality of the programme.

Katz (1998) believed that the nature of interactions reflect the values and beliefs that teachers bring with them. This belief is implicit in the overall culture from where the teacher comes from and is different from the explicit culture of the pre-school setting. For example, the nature of teacher-child interaction in the pre-school of Reggio Emile is

a reflection of the larger cultural setting of Italy. This form of interaction is not likely to be found in another country where the social-cultural setting has different beginnings, the course of history is different and the nuance of communication and interactions vary considerably between cultures.

However, there is a difference between child-referenced interactions and child-centred interactions (Kugelmass and Ross-Bernstein (2000). In the former, the teacher's immediate reactions and responses are guided by information specific to the particular child in the context of specific activities or events. On the other hand the latter is an overarching approach where transactions are based on understanding of the child's abilities, interests and needs according to age and developmental normalities (Copple and Bredekamp (2009).

In reality, verbal messages are reinforced by non-verbal communication through body language (Egle, 2004) and it is difficult to separate verbal and non-verbal interactions. In the case study discussed by Kugelmass and Ross-Bernstein (2000), verbal and nonverbal patterns are said to be merged until detailed analysis based on video observations was carried out. Nonverbal interactions observed are analysed according to four criteria. Firstly, body positioning which consists of elements including the height that the teacher has placed herself/himself in relation to the child or the adult's eye-level in relation to the child's when speaking or playing. Secondly, how the teacher moves through the space in the area where the interaction is taking place. To expand on this point, the proximity between teacher and child is affected by the type and characteristics of the interaction. In play activities, where the teacher is a partner of play, it is likely for the teacher to be up close and seated amongst the children or

moving in and out of their play space. Thirdly, communicating through body language and facial expressions. Lastly, touching and holding children dictates the level of interest the teacher has for them. These non-verbal interactions are especially relevant when analysing the affective interactions using the High/Scope Preschool PQA criteria. However, for this paper, these non-verbal attributes will not be singled out for analysis on its own.

2.3 The challenge of theory in practice

Are teachers able to practice according to their beliefs at all times? Although interaction and learning has been well documented, most of the teacher-talk in reality consists of teachers making utterances that do not require an answer or merely asking closed questions. The findings of a study (Galton, Hargreaves, Comber, Wall and Pell, 1999), found that over a span of two decades in the primary school, teachers who took part in a study spent 75% of their time use telling and instructing, which is a transmissive approach where the 'teachers talk and children listen'.

Common challenges faced can be external to the teacher. This includes parents, school leadership and colleagues, as mentioned in Wilcox-Herzog and Ward (2004).

There are also numerous explicit influences which Kugelmass and Ross-Bernstein (2000) found in their case study. They are namely education, training, developmental theories, teaching experiences, previous work experiences and knowledge of the children involved. In addition, I will also consider the schedule of the child's day in school, group size and the objectives and nature of the lessons and activities. In Kugelmass and Ross-Bernstein's case study, these additional points are

discussed as the context for adult-child interactions. Context and beliefs are brought up for discussion as they are found to have significant influence over how teachers interact with children based on their cultural background. There are differences among cultures and developmental theories and pedagogies have emerged in the context of cultures. It is thus necessary to look beyond formal theory to work out interactions with children that are individually and culturally appropriate.

Wilcox-Herzog and Ward (2004) found that teacher aides are better able to practice according to their beliefs than the teachers themselves. It is typical for school directors to work directly with their teachers to improve classroom quality; the teachers in turn have to work with the teacher aides. Thus the teachers feel pressured to act according to the beliefs of their directors, which may not be matched by their own.

The teachers in different classroom learning formats will also have different perceptions of their roles and responsibilities. Under different types of lessons arrangements for the children, the types and styles of interactions will inevitably differ.

On the other hand, there are factors that are inherent in the teachers themselves, such as attitude and mind-set.

2.3.1 The training

Mixed findings are presented in the area of the relationship between interactions and general education versus professional specialised education. Cassidy and Buell (1996) reported no difference in teachers' responsive language from the two groups. Similarly, Kelly and Camilli (2007) cited in Barnett (2011) found only modest positive effects. On the other hand, Arnett (1989), and Howes and Stewart (1987) reported

greater sensitivity and higher involvement from teachers with higher qualifications such as a bachelor's degree or higher, in early childhood education. Kontos and Wilcox-Herzog (2003) concurred that coherent teacher preparation programmes make a difference to the quality of teacher verbalisations. Barnett (2011) and Bowman (2011) on the other hand reiterated that tertiary general education makes a difference in bringing about changed thinking of teachers and higher level of cognitive agility and skills.

Mashburn and Pianta (2010) argued that a large amount was spent on in-service and pre-service teacher-training and professional development, yet little evidence of their positive effects in the classroom in the area of observed child-teacher interactions have been seen. Since then, there has been a shift towards professional development that is active, collaborative and contextualised (Darling-Hammond and MacLaughlin, 1995, cited in Mashburn and Pianta, 2010). Mashburn and Pianta (2010) advocated of a new approach that consists of mentoring, coaching and consultation (continuous classroom guidance and support rather than the traditional knowledge-based training).

2.3.2 Culture and philosophy

Within different societies, values have shaped thinking and practices. Values that are important to educators and families may be consistent or conflicting. Where both come from similar social contexts; values and beliefs will tend to converge. The educator's beliefs are influenced by experiences during childhood, general education, professional training and personal values and they take a certain form. However, in the school setting, their encounters with parents and other educators will further shape

his/her beliefs depending on who has the more influential voice. Thus, values and beliefs become relative and dynamic, and can also affect classroom practices. Reports by the Organization for Economic Co-operation and Development (OECD 2001 and 2006) attested that "values and traditions within countries determine how early childhood services are provided" (Berthelsen, Brownlee and Nirmala, 2011, p. 6). This axiom will also apply to teachers' verbal interactions with children in the classroom.

Several studies have shown different interaction patterns among cultures. Dobinson (2001) carried out a study among students mostly from Asian backgrounds and the observations are in agreement with previous studies, done by Ballard and Clanchy (1991); and Biggs (1990), Chalmers and Volet (1997) and Littlewood (2000) cited in Dobinson (2001). These studies noted that Asian students were observed to participate covertly in the interaction of a lesson which Allwright (1980) cited in Dobinson (2001) called, "spectator interaction".

Comparing the acclaimed developmentally appropriate philosophies in early childhood education (High/Scope Preschool Curriculum, Montessori Education, the Reggio Emilia Approach, and the Rudolf Steiner and Waldorf Schooling), the High/Scope Preschool Curriculum and the Reggio Emilia Approach's verbal interactions will be elaborated as their pedagogies are more widely studied and adapted for the local context. . The Plan-Do-Review Sequence, unique to the High/Scope Program is versatile and easy to adopt in eclectic settings. The Reggio Emilia Approach on the other hand has attracted many followers who are inspired by the Hundred Languages of Children and the documentations of the beautiful Infant-Toddler and Preschool settings in Italy.

In Singapore, the Montessori approach is practiced within Montessori Pre-schools and Montessori teacher training is not a PQAC accredited course. The presence of the Rudolf Steiner and Waldorf Schooling in Singapore is also minimal.

In the High/Scope curriculum, “teachers are actively involved in open-ended questioning of children, listening to children’s responses to these questions and problem-solving with them” (MacNaughton and Williams, 2009, p. 400). These strategies embodied in the Plan-Do-Review Sequence are unique to the High/Scope programme. Through the High/Scope teachers’ style of interaction, children are empowered to make choices and decisions and solve problem through the teachers’ feedback and suggestions. The children in the United States where this approach originated are generally vocal, expressive and not inhibited to initiate a conversation. Even the slow-to-warm up child, through the teacher’s creative way of drawing verbal and non-verbal responses, easily joins the discussion circle

In the Reggio Emilia schools, physical spaces are thoughtfully planned to encourage communication, exchange and interaction between people. Constant reflections, observations and interpretations of daily practices lead the teachers to be in-tune with the interest and ideas of children. These thoughts are brought to the discussion table with other colleagues and subsequently for dialogue with children (Gandini, 1998). The environment and pedagogy is also a reflection of the culture of the people. The teachers do not give children ready solutions but assist them to think about the problems and hypothesise, even though the hypothesis or approach may not be ‘correct’ (Edwards, 1998). Thus as co-constructors in children’s learning, the teacher provokes children’s thinking through open-ended questioning, recalling, listening,

feedback, demonstrating and describing. The children in the pre-schools of Reggio Emilia like the American counterparts are equally vocal. Being immersed in the environment where adults display the disposition to explore, create, participate and build relationship, children model those behaviours and thus interactions becomes a 'game of ping-pong' (Edwards, 1998, p.179).

2.3.3 The crucial factors for translating beliefs to practice

It is vital to examine the context in which beliefs can be translated into practice. Stipek and Blyer (1997) wrote that parents, leaders and fellow teachers in setting are a subtle hindrance to apply ones beliefs. Furthermore, Kugelmass and Ross-Bernstein (2000), concluded that the lack of critical reflection by the teacher is a plausible reason for the 'lack of conscious awareness' (pg. 26) of critical aspects of teacher-child interactions in the classroom.

Killion and Todnem (1991) cited in Reagan, Case, and Brubacher, (2000) developed the concepts of reflection-on-action, reflection-in-action and reflection-for-action based on Schon's earlier works. In the context of the early childhood setting, reflection-on-action requires teachers to think about what had just taken place in, for example, the lessons conducted. Reflection-in-action takes place during the lessons and teachers make adjustments to earlier intentions and plans as they interact with the children. Finally, reflection-for-action guides the teachers for future actions in a proactive manner. Reagan, et al., (2000) believed that practicing reflection-on-action and reflection-for-action is more common for novice teachers whereas reflection-in-action is practiced by more experienced teacher. Nevertheless all the three forms of reflections mentioned should ideally function in a spiral manner, 'before, during and

after' and back again to reflection-for-action. Continual reflective practice becomes the radar for professional action and helps bring together theoretical knowledge and classroom practices. It is a skill for teachers to hone.

2.4 Summary of the literature review

There is substantial literature which suggests that teachers' beliefs underpin classroom practices (Aguirre and Speer,1999; McMullen, 1998; Parajes, 1992; Vartuli, 2005). However, there are also counter arguments which say otherwise (Kontos and Dunn, 1993; Peled-Elhanan and Blum-Kulka, 2006; Verma and Peter, 1975). Both constructs can be consistent with, or differ from, each other and the attributing factors may include the attitudes and teaching styles of teachers or culture of the context.

Literature also points to the fact that teachers' previous schooling experiences have a screening effect on their new learning. Furthermore, their epistemological beliefs about interactions with children affect the style of interactions that they will adopt, for example, a teacher-directed or child-centred approach.

Each of the seven verbal instructional interaction techniques discussed has its purpose for children's learning. Two most commonly used techniques, asking closed question, and telling and instructing, have limited benefits and are associated with transmission of knowledge. However, demonstrating, giving verbal feedback, describing, suggesting and asking open questions aid children's language development, thinking and problem-solving.

The quality of verbal interactions does not depend on techniques alone, but also on the affective atmosphere created by the teacher. Sensitivity to children's needs,

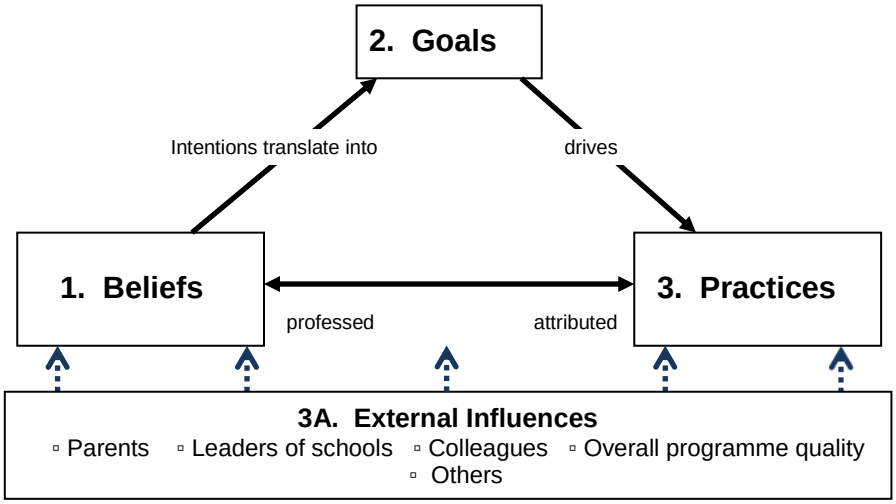
abilities and interests; encouragements and support given during play and teacher-talk are part of the emotional interaction criteria.

It is found that the overall quality of the programme (Kontos and Dunn, 1993), and other factors external to the teacher, as well as those implicit to the teacher, his/her beliefs and teacher characteristics also affect teacher-child verbal interactions. Critical reflections by teachers will help overcome challenges to applying theory in practice for evidently it is the teacher who can make a difference.

To date, literature and studies are mostly generated in the USA and UK with a 'western' perspective. There are few studies in non-western settings and Asian and the Singaporean context in particular. It is clear that culture influences teachers' beliefs and practices in early childhood settings, as well as affecting young children's language and development. Thus it is imperative to research more within the local context.

Figure 2

Theoretical Framework of Belief – Practice/Action Relationship



2.5 Theoretical framework and research questions

From the literature review, the various constructs and relationship are integrated in a theoretical framework, as shown in Figure 2, for further exploration in the Singapore context.

Based on the theoretical framework, research questions are organised to study teachers from selected schools. Using Creswell's (1994) format of overarching research questions and Hatch's (2002) recommendation for questions to provide specific direction, the following are formulated to find out:

i. What are teachers' professed beliefs and perceptions about teacher-child verbal interactions?
ii. What are the observed classroom behaviours and practices?
iii. What are the differences between professed beliefs and practices and the possible reasons for these differences.

The above questions address numbers 1, 3 and 3A (in Figure 2) and the sub-questions that follows will delve deeper into all areas of the theoretical framework. The sub-questions are:

- What are teachers' beliefs and perceptions of teacher-child verbal interactions and children's learning?
- What are teachers' perceptions of their roles in this area?
- What are teachers' classroom practices?
- What are the apparent reasons for teachers' classroom practices?

The above set of questions will lead the study in search of possible answers in the local context.

2.6 Summary

The supporting literature in this chapter deliberated on what are verbal interactions, teachers' beliefs and practice of classroom verbal interactions and the factors that affect the quantity and quality of the interactions. The works of several researchers also give some deeper thoughts for issues and challenges related to interactions. The lead to search for answers to this study mentioned on page 5, is now represented as research questions and sub-questions stated in this chapter. The next chapter will bring the reader through the research design, the procedures for data collection and analysis, outcomes and strengths and weaknesses of the approach taken.

CHAPTER 3

RESEARCH METHODOLOGY

3 Introduction

If beliefs shape one's perceptions and interpretations of classroom interactions (Aguirre and Speer, 1999), listening to teachers' beliefs is an important first step towards understanding their practices. In order to hear the voices of teachers and understand how they interact with children, a natural and realistic classroom context is necessary (Hatch, 2002; Yin, 2009).

To delve deeper into each teacher-child verbal interaction, the following study questions are crafted:

i. What are the teachers' beliefs and perceptions about teacher-child verbal interactions?

ii. How do the teachers actually interact with children in the classrooms?

iii. What are the differences between teachers' professed beliefs and practices?

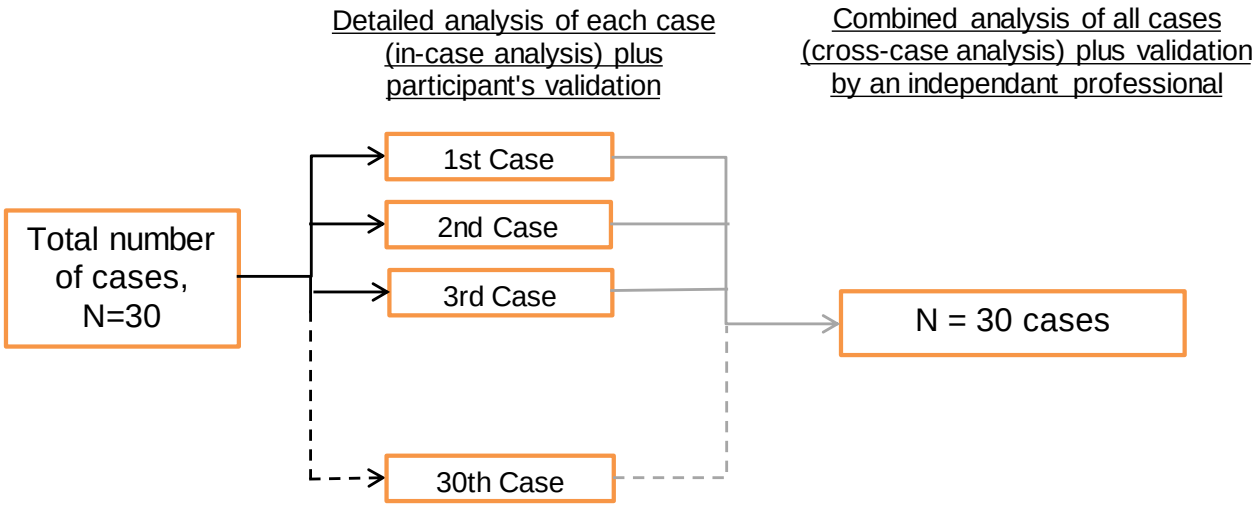
iv. What are the possible reasons for the differences between beliefs and practices?

The intention of the study for teacher education is to explore how training programmes can be improved. It is also to understand how early childhood educators can hone necessary skills and dispositions.

3.1 Research design

In this study, the case study approach was used across multiple sites. Yin (2009) described unit(s) of analysis, an important component of the research design of case studies. As each individual case for this study was a different teacher in the 19 pre-school settings (either from a kindergarten or child care centre) 30 teachers had collectively made up the multiple-case study (refer to figure 3 for a graphic representation of the model). Each case was analysed in the context of the classroom and school conditions surrounding it. As such, a holistic rather than an embedded design was used. An embedded design was required as the various factors in the classroom and schools that influence the teacher's behaviour patterns were to be examined in greater detail, entailing additional collection of data.

Figure 3
Framework for Unit of Analysis in a Multiple-case Design



Based on the conventions for case studies mentioned by Creswell (1994), Merriam (1988), Smith (1978) and Yin (2009), this exploratory study sought to take the reader into the place where actions and issues arose. Real-life teacher-child interactions were captured and the events to be observed were contemporary and not historical. Besides the physical boundary of each case, defined by the individual school setting, temporal boundaries for investigation were set by a time frame unique to each setting. The focus of action that took place was during the main structured teaching periods of the participating schools and teachers. Tan (2007) and MOE (2003) made mention of this approach to the delivery of lessons.

The data collection methods employed in this study were according to suggestions made by Creswell (1994) and Patton (1990) for case studies. Multiple sources to provide evidence (Yin, 2009) included written documents, direct observations and interviews. In this study, the researcher was involved in all aspects of the research design, and the participating teachers were referred to inter-changeably as teachers or as participants.

3.1.1 Multiple sources of information

The methodology used by Gillies (2006), a modification of Hertz et al. (1990) observation schedules, in her investigation on *'Teachers' and Students' Verbal Behaviour in Cooperative and Small-group Learning'*, she required participants to complete a questionnaire on their beliefs about teaching and lessons followed with audio recordings all of which were transcribed. By adopting the mentioned methodology, participants of this case study were requested to complete a Pre-

classroom Observation Questionnaire and Reflection (PcOQR) form. The PcOQR recorded participants' perspectives through self-report of his or her beliefs about how children learn; the nature of teacher-child interactions and the teacher's roles (Hatch, 2002). The information obtained was then used in relation to direct observations to gain a better understanding of teachers' actual verbal interactions in the classroom during large and small group teaching sessions.

Reports from Jackson (1968) and Pajares (1992) showed the complexity of mental constructs and processes that underlie teachers' behaviours. Thus it was necessary to document details of observable behaviours. Furthermore, it was also necessary to gain information on participants' thought processes which were less accessible (Spodek and Saracho, 1994). Clark and Peterson (1986) suggested that a model was needed to deal with both thoughts and actions. Unlike teachers' actions which are observable, thought processes are internal and thus not accessible. To overcome the above challenge, teachers' thoughts were obtained from interviews (verbal thoughts) and reflective writing (written thoughts). A multi-source approach mentioned by Patton (1990), and adopted by Dobinson (2001) in his study of '*English Language Classroom Interaction and Learning'*, allowed for clarification of observational findings. It also aided in gaining further insight into issues raised by questionnaires, hearing from the teachers of their voices, beliefs and perceptions, obstacles and constraints and verbal behaviour in the classroom.

The study by Wilcox-Herzog and Ward (2004) on '*Measuring Perceived Interaction with Children'* also highlighted the importance of directly observing teachers'

interactions, as professed beliefs about interactions might not represent how they engaged with children.

Observations, the cornerstone of qualitative data collection provided details of the actions that took place on-site. The researcher recorded an overview of the teaching sessions, noted movements in the class, facial expressions of the teachers and children and other potentially significant features. Teachers' interactions were audio recorded for the length of the lesson, transcribed and then compared with observational records. This process helped compensate for the scale and depth of observations and attentional skills of the observer (Creswell, 1994). Audio recording was selected as it is a less distractive mode of recording in the presence of children compared with video recording. Anecdotes and audio transcripts were subsequently analysed simultaneously for affective and instructional interactions.

At the end of the 'teaching session', teachers were asked to reflect on the lesson which he/she had just taught. The concept of reflective thinking and the reflective teacher were derived from Dewey (1933) and Schon (1983) respectively. Reflective thinking is synonymous to flipping an event or an issue over and over in the mind and giving it some thoughtful and repeated attention (Dewey,1933). Schon proposed that teachers who engaged in critical reflections of their beliefs were more effective practitioners. Ghayes and Ghayes (1998) considered reflection as an intentional act of thinking about the rationale of actions or beliefs. The post-teaching 'reflecting-on-action' process enabled teachers to think about the meaning making process encountered.

Table 3.1
Research Design: Multiple Sources and Data Collection Method

(A) Creswell (1994) Patton (1990)	(B) Instruments	(C) Information to capture:	(D) Research and literature to support item (B)
Written Documents	Preliminary Data	Participants' demographics; Continuing professional development; Past schooling experiences; Values	Arnett (1989) Berk (1985) Creswell (1994) Kontos et al. 1995 Kontos & Wilcox-Herzog (2003) Patton (1990) Yin (2009)
	Pre-classroom observation Questionnaire and Reflection	Beliefs of the teacher : • How children learn • Role of the teacher • Instructional interactions • Affective interactions Influences on lesson planning	Gillies (2006) High/Scope P.PQA (2003) MacNaughton & Williams (2009)
	Lesson Plan (Artefact)	Goals for children Large group and small group: Plans for the lessons and activities	Patton (1990)
	Post-teaching Reflection	Teachers reflecting on: • Current lessons • Nature of verbal interactions • Changes for future lessons and reasons	Dewey (1933) Dobinson (2001) Ghayes and Ghayes (1998) Schon (1983)
Direct Observations	On-site Observation	Anecdotes of interactions Audio recordings	Dobinson (2001) Gillies (2006) Jackson (1968) Pajares (1992) Wilcox-Herzog and Wards (2004)
Interviews	Interview Guides	Validate observer's thoughts	Chiseri-Strater and Sunstein (1997) Dobinson (2001) Hatch (2002) Kushner and Norris (1980)

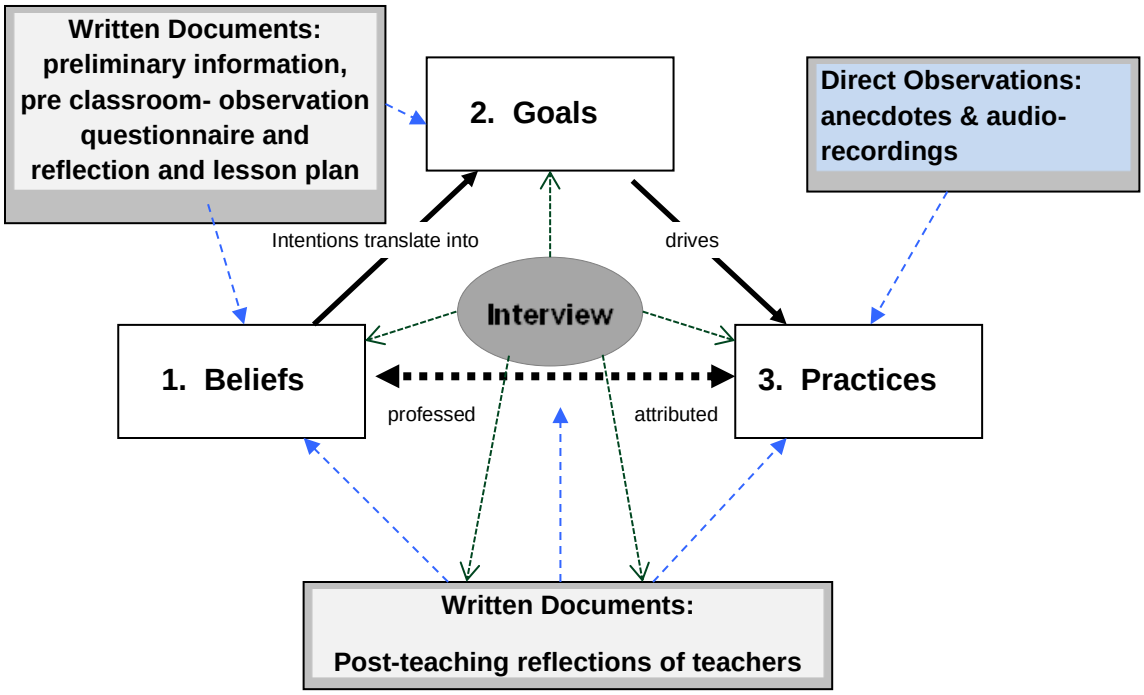
Interviews with the participants that followed after the reflective period provided the researcher with a deeper understanding of the actions of the teacher and his/her thought process that took place during the observation session. It allowed the clarification and anticipation of events that had not taken place (Hatch, 2002). A set of interview guides (developed for research purposes) was used. It allowed the researcher flexibility to omit any of the questions (Chiseri-Strater and Sunstein, 1997) if deemed redundant during the meeting with the participant after the observation and post-teaching reflective exercise. Although interviews had given the researcher greater control over the line of questioning (Creswell, 1994), sensitivity towards participants was the key consideration amidst the need to obtain necessary information. Thus, the tone and demeanour of the interviewer was inclined towards a social/casual chat. However, it was still important to capture elements that emerged, stay genuinely interested and abstain from overloading the participants with a cross-examination style of questioning.

As collection of artifacts would give information on values held by organisations (Patton, 1990), lesson plans and post-teaching reflective writing enabled triangulation of data collection. Triangulation is defined as the use of one or more methods of data collection (Cohen and Manion, 1994), as shown in Figure 4. Thus the use of multiple sources of data ensured internal validity. The lesson plans used by the teachers provided insight into the way they carried out their lessons, and reflective writings revealed the thought processes behind the teachers' actions (Hodder, 1994 cited in Hatch 2002 p. 117). The research design described up to this point is illustrated in Table 3.1 and Figure 4.

Figure 4

Research Design and Processes of Each Case in the

Multiple-case Study



It was initially proposed that 40 participants be recruited for the study. However, due to unforeseen personal circumstances, ten participants either withdrew from the study, or did not meet the minimum professional specialised training criteria. As data was collected, the researcher concurrently transcribed and analysed the available data. Three-quarters of the way into data analysis, patterns of verbal behaviour of the participants became apparent and the researcher decided to stop at the 30th participant, without recruiting additional participants. This decision was made based on the criterion of 'repeat until redundancy' (Lincoln and Guba, 1985) and as 'saturation' point was reached (Glaser and Strauss, 1967; Merriam, 2009).

3.1.2 Design of data collecting tools

There are several tools that measure teachers' beliefs in general, such as the Teacher Beliefs Scale of Charlesworth, Hart, Burts, and Hernandez, (1990). Some are focused on specific topics of research such as '*English Language Classroom Interaction and Learning'* by Dobinson (2001) and '*Teachers' and Students' Verbal Behaviour in Cooperative and Small-group Learning'* by Gillies (2006). For this study data collection tools were adapted and modified from various sources in order to focus on affective and instructional interactions. The '*affective and instructional interaction belief questionnaire*' (that was incorporated in the Early Childhood Educator Belief Questionnaire refered to as the PcOQR form, Appendix A, p.169, used in this study) was developed by incorporating adaptations from two different sources which are described below.

The first source was from the High/Scope Preschool Program Quality Assessment (PQA), a programme measure which was developed, tested and revised by High/Scope Education Research Foundation in 2003. It is an All-in-One Programme Evaluation system which is currently being used in many centre-based early childhood settings in the United States. The two instruments in this measure are: Classroom Items and Agency Items. Classroom Items is further divided into four categories namely:

(I) Learning Environment;

(II) Daily Routine;

(III) Adult-Child Interaction; and

(IV) Curriculum Planning and Assessment.

Within the Adult-Child Interaction inventory, there are 13 sub-categories. Seven out of the 13 sub-categories were selected for this study as they had the closest resemblance to the Belief-Intention Scale (mentioned in Chapter 2, p. 33) which was developed and tested by Wilcox and Ward (2004) for *'Measuring Teachers' Perceived Interactions with Children'*.

In the current study, the objectives of the study, nature of early childhood programmes and culturally appropriate practices in Singapore determined the selection criteria from the inventories mentioned above. The seven adapted sub-categories are shown in Table 2.1, column B (found in Chapter 2, p. 34). The modified version, called *'Affective Interactions'* is as follows:

- Teachers create a warm and caring atmosphere for children;
- Teachers use a variety of strategies to encourage and support children's language and communication;
- Teachers participate as partners in children's play;
- Teachers encourage children's learning initiatives
- Teachers support and extend children's ideas and learning during group times.
- Teachers acknowledge individual children's accomplishments.
- Teachers encourage children to interact with and turn to one another for assistance.

Referring to Table 2.1 again, in column B, criteria III (D) reads that "*the adult uses…strategies to encourage and support … communication". Since* the implicit meaning of this criterion is that the adult is "*to encourage and support"* children's

learning, it is considered an affective criteria rather than instructional criteria. Each of the seven criteria has elements of desirable qualities of good teachers, such as being accepting, caring, considerate, stimulating, encouraging and engaging (Ros-Voseles and Fowler-Haughey, 2007).

The High/Scope Preschool PQA refers to participants as 'adults'. For the purpose of this study, 'adults' were replaced by 'teachers', in order to create a specific parameter. As the observations were carried out in classrooms involving small and large group activities, the terms 'indoors and outdoors' were removed, and 'throughout the day' was modified to 'throughout the lesson'.

The second source came from teaching techniques discussed in MacNaughton and Williams (2009). The seven selected criteria are strongly instructional in nature (as described in Chapter 2, pp. 20 to 46) and are classified as instructional interactions in this study. They relate intently to educational and teaching strategies which are similar to Mashburn and Pianta's (2010) category under the label of 'Instructional Interactions'.

3.1.2.1 The instruments

In order to set parameters for collecting data to meet the objectives of this study, four documents were created. The Preliminary Data of Participants form, the Pre-classroom Observation Questionnaire and Reflection form, the Post-teaching Guided Reflection form and the Guided Interview form.

The Preliminary Data of Participants form (Appendix B, p. 173) was developed to collect key information about each participant. This information included general education and professional specialised training levels. It also asked for the number of

years of working experience in early childhood education and continuing professional development involvement. Additionally, Information on personal experiences during one's early childhood and important values which one would uphold when working with young children were required. A co-relation between the level of general education, professional specialised training in early childhood development and learning of teachers and the quality of teachers' interactions with young children (Arnett, 1989; Berk, 1985; Kontos, et al., 1995; Kontos and Wilcox-Herzog, 2003) was found in several studies. Based on the claim made by Pelad-Elhanan and Blum-Kulka (2006) that "every environment creates its own discourse and genres" (p. 110), the screening of participants permitted greater homogeneity so as to reduce factors that could potentially influence the study. The study sample consisted of teachers who had a minimum professional specialised training in the Diploma in Early Childhood Care and Education – Teaching. McMullen's (1998) study confirmed that teachers who had professional specialised training in early childhood scored significantly higher in aspects of appropriate beliefs and practices.

The PcOQR form (Appendix A) as mentioned earlier, was adapted from two sources with modifications. They were the High/Scope Preschool PQA (2003) and MacNaugthon and Williams' (2009) list of seven general techniques. A five point 'Likert Scale' variation was adopted with numerical and descriptive weighting assigned. Included in the PcOQR forms were open, closed and reflective questions which focused on finding out the following:

- the teacher's beliefs about how children learn best (Gillie, 2006);
- the teacher's perception of his/her role;

- the teacher's beliefs on the types of instructional and affective interactions used in the classrooms;
- the people who are involved in the planning of lessons;
- goals for children and how they can be achieved; and
- the factors that have influenced the teacher's intention for the children.

Open questions allowed participants to articulate their personal thoughts and emotions related to the theme of this research (Patton, 1990). Since Ghayes and Ghayes (1998) reiterated that reflections could occur before, during or after a lesson, the reflective exercise included in the PcOQR form, allowed participants to articulate their beliefs of how children learn best, their beliefs about teacher-child interactions, interaction and learning, and their roles, prior to conducting lessons with the children.

The Post-teaching Guided Reflection form (Appendix C, p. 174), which required each participant to note down his/her feelings and thoughts about the lesson, was based on Ghayes and Ghayes' (1998) beliefs. It is further supported by Wood and Bennett (2000) who expounded reflective teaching as the anchor for professional growth where reflective processes enable teachers to articulate their implicit personal theories to explain their practices.

Fenstermacher (1994) provided insights into the importance of practical reasoning of teachers, and how practical reasoning aids our understanding of what they do in the classroom. Thus in order to comprehend teachers' actions, interviewing teachers was the best way to draw out answers. The Interview Guide form (Appendix D, p. 175) was used for this purpose, which provided the researcher with the flexibility to decide on what was most relevant during the interview.

3.1.3 Participants and contexts

Apart from the minimum professional specialised qualification of participants, there were no other criteria placed on participants in terms of ethnic composition, age and gender. The number of years of teaching experience was not a criterion, as experience had been cited in various studies as an insignificant factor (Arnett (1989), Howes, Phillips and Whitebook (1992) cited in Kugelmass and Ross-Bernstein (2000), Kontos, Howes, Shinn and Galinsky, (1995) and Cassidy and Buell (1996). Therefore participants were not required to have a minimum number of years of teaching experience in early childhood education to participate in the study. The language of instruction used by participants had to be in English as it is Singapore's formal language of instruction despite the well-established bilingual policy. This parameter was also set for ease of communication between participants and the researcher, and to reduce any errors caused by interpretation and translation of terminologies and overall content between languages.

Due to time and logistic constraints, a convenience sample was used and the source of samples came from work-related access. Nine kindergartens (Group K) and ten child care centres (Group C) participated in this study. Early childhood centres, as mentioned in Chapter 1, pages 11 to 12, are registered under the MOE or MCYS. Therefore, the assumption that they meet minimum quality dimensions such as physical environment guidelines, student-teacher ratios, teacher qualification requirements, and curriculum structure and content was made.

Group K consisted of six non-profit kindergartens from the PAP Community Foundation (PCF) group. The other three kindergartens were managed by religious

and philanthropic organisations. Group C consisted of ten child care centres, one of which was from the PCF group, and five from Voluntary Welfare Organisations (VWO). The latter were from non-profit organisations while the final four childcare centres were business enterprises.

There was a total of 30 participating teachers (N=30), of which 14 were kindergarten teachers (KT) and 16 were child care teachers (CT). All participants were Singaporeans, with 29 female teachers and one male.

Data collection was carried out in early childhood classroom settings with children who were four or five years of age. The observation of teacher-child verbal interactions was carried out during both the large and small group structured indoor teaching sessions. The indoor environment provided more certainty for data collection as it was not affected by natural elements, such as the rain, which could have disrupted lessons and thus data collection.

3.2 Piloting of tools

The instruments for the study were piloted with two teachers over a two-week period in August 2010, in a school that had a hybrid of kindergarten and child care programmes. The researcher was overwhelmed by the busy-ness of the classroom and was initially uncertain about the extent of details to be recorded for the observations. Everything that happened in the classroom seemed important enough to be noted down. It was advised by Paton (1990) that the “movie camera ha[d] to be pointed in the correct direction to capture what [was] happening” (p.216); and Hatch (2002) recommended to record only what required attention. Thus the researcher

became more assured. Yet, it was problematic at times as to whether the researcher had been too interpretive and insufficiently descriptive.

During the course of the research, changes, the key characteristic of qualitative research (Hatch, 2002) emerged. There were problems with the forms that were developed to aid the data collection process. Upon interviewing the teachers, it was apparent that they had differing understanding and interpretations of the terminology used, such as ‘values’, ‘teaching’, ‘academic and professional qualifications’ and ‘large and small group activities’. When decoding verbal interactions from the transcripts, the researcher stumbled upon the blurring of lines differentiating within instructional interactions such as describing, giving verbal feedback and suggesting. Direct suggestions were sometimes mistaken for telling and instructing.

The Interview Guide was reviewed and modified. Questions similar to those in the PcOQR form were removed, and the tone and texture of the questions were softened. Some terminologies were either simplified or explained to aid in understanding and avoid misinterpretations. For example, one pilot-participant interpreted ‘values’ from a personal perceptive and declared being thrifty as a value she brought to the classroom. To avoid similar misinterpretation, a short explanation for ‘values’ was given in parenthesis as ‘what is important to you as a teacher’. These terminologies were also explained during subsequent introductory visits. Next, processes were streamlined and irrelevant items were removed. Overall, the pilot work gave the researcher greater understanding of circumstances in the classroom, and more confidence during the actual data collection phase, as well as some insight of how the data analysis would turn out. While transcribing and analysing the pilot sample, it

was found that subsequent observations and interview processes could be further streamlined.

3.3 Qualitative procedures

By the nature of qualitative research, the process and meaning of teachers' beliefs and interactions were of primary concern rather than the outcomes. Belief is a construct that is fluid. Although there are studies that use the Teachers' Belief Scale, as with affective dimensions, the rationale behind one's beliefs and practices require a more detailed investigation. Due to the lack of grounded theories to explain human behaviour satisfactorily in this area, the researcher was required to describe cases, explore and then develop theories.

3.3.1 Role of the researcher

In a qualitative research methodology, the approach of the 'researcher as a data gathering instrument', is supported by Paton (1990) and Hatch (2002). Based on this approach, the researcher was directly involved in the on-site observation of teachers in the classroom by being a spectator observer. The researcher was also personally involved in examining lesson plans, post-teaching reflections and carrying out face-to-face interviews with participants at the end of observational visits. At the data collation and analysis stage, the researcher was involved in the transcription and analysis of the data to "make sense of actions, intentions and the understandings of those being studied" (Hatch, 2002, p. 7).

This investigation covered the researcher's topic of interest, which as Moss (2005) described this as a topic common in the realm of social science. According to Moss, people's words and actions carry meaning to them. These words and actions, together with their perceptions are shaped by the context in which their experiences have taken place. Thus, awareness of and maintaining a professional role is paramount. One has to exercise reflexivity (Moss, 2005; Merriam, 2009) through the process of constant scrutiny and critical reflection of ones thoughts and actions.

With the knowledge that in an interpretative research, personal values and judgments will influence interpretation of information and will be explicitly evident in the report, objectivity was strictly exercised at the onset of data collection. Daily critical reflections helped minimise the presence of potential bias; maintaining field notes and daily logs contributed to the overall accountability of the research effort. The researcher herself played a key role in the collection of data, and the process was also inductive. While the researcher was not a participative observer, she had close up contact with the participants in the classroom and had the option of having continued dialogue even after the observational visit. Exposure to the various observation sites allowed the researcher to have first-hand visual and emotional experiences in those different settings. As Patton (1990) reiterated, distance does not guarantee objectivity, closeness does not mean bias will creep in.

3.3.2 Assumptions of qualitative design

Assumptions were made with reference to the subjects and context of the design.

The first assumption made was that children who are 4 years old are generally more verbal and communicative than those who are younger. However, Singapore classroom settings (mentioned on p. 8), do not have homogenous age groupings. In some of the classrooms observed, there were children of ages 3 years old together with 4 years old, or 5 years old children together with 6 years old.

The second assumption was that large and small group 'teaching' time would be the key instruction time for the class. Furthermore, during the small group activity time, teachers would be moving amongst the children to monitor, guide and provide assistance. It was believed that in doing so the teachers would engage in a fair amount of dialogue with the children.

The third assumption was that teachers with the minimum Diploma training had received homogenous quality instructions despite being trained in various training agencies. Since training agencies have been accredited by PQAC, variation in quality should not be an issue.

Finally, it was also assumed that the researcher, with her background knowledge and familiarity of classroom scenarios, would not neglect details that could be taken for granted. Hatch (2002) had pointed out the danger of preconceptions when a study is based on an area familiar to the researcher.

3.3.3 Data collection procedures

The kindergartens and child care centres were approached through telephone calls and emails (Appendix E, p. 177). Requests were made to the leaders (principals and supervisors) inviting the schools' Diploma-trained teaching staff to take part in the

study. Information sheets on the research project (Appendix F, p. 179), consent forms (Appendix G, p. 180) and reply and confirmation slips (Appendix H, p. 181) were sent to the leaders for consideration and dissemination to teachers who were adequately trained. Once approval was given, teachers who had volunteered were requested to complete the preliminary participant data form (Appendix B) and to return them to the researcher during the introductory visit. Overall willingness to participate was a key consideration.

Dates for the introductory visits were fixed based on mutual availability. The objectives of the visit were to give participants an overview of the project, the researcher's involvement and expectations of participants. A written description (Appendix I, p. 182) was given to participants to assure confidentiality and ethical practices. Next, the preliminary data forms were collected and were used for screening to set a delimitation of participants for the study (Creswell, 1994). Each participant was given an alphanumerical code.

Questions from participants were taken and clarifications given to ensure that participants understood the procedures which the researcher was using. It was important for participants to be aware that they should not 'prepare to put up a show' or put on a special lesson but were encouraged to behave as natural as possible when conducting their lessons. This was mentioned in Torff and Warburton (2005) for the observational visit. Similarly Patton (1990) warned about the 'halo effect' when formal observations begin. Reassurance had to be given, that the researcher's presence in the classroom would be non-evaluative and non-judgmental (Rodriguez, 1993). It was

also important since verbatim classroom conversations were recorded, which could be intimidating for the participants (Hatch, 2002).

The PcOQR forms were sent to participants via email at least two days prior to the observational visit, so that they could be completed and collected on the day of the researcher's visit. The participants decided on the time of the day most suitable for the researcher's observational visits.

Participants were requested to forward through email their lesson plan for the period of the observational visit. The lesson plan served as artefacts to examine the relationship between the goals which teachers set for children and their professed beliefs and interactions. There was no standardised format required, and participants could use the planning format adopted by their respective schools.

Participants were informed in advance of the Post-teaching Guided Reflections and a short face-to-face interview that followed after their lesson. In total the observational visit took about two hours.

At the end of the observational visit, permission was sought for participants to continue the communication process via email till the end of the research study. This was the backup plan in the event that the researcher had overlooked information during the visit.

3.4 Data analysis

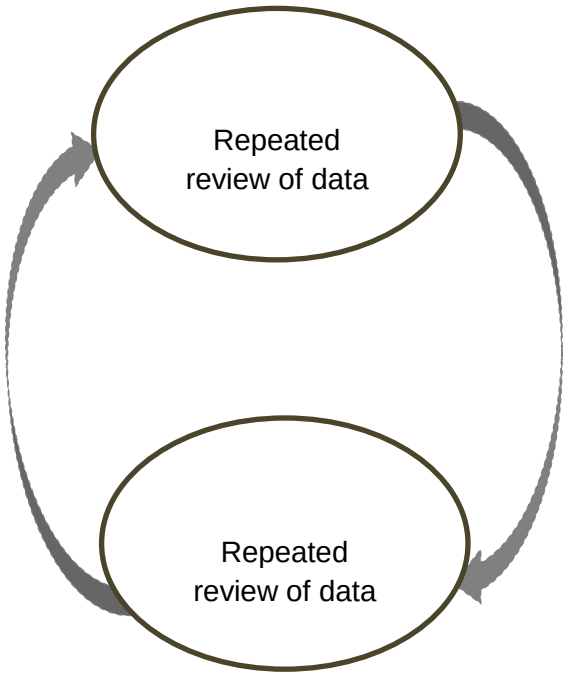
An inductive approach to data analysis for the case study adhered to recommendations by Hatch (2002) and Patton (1990). Data analysis occurred from 'ground up' and the researcher pieced a puzzle together without knowing how it would

look (Bogdan and Biklen, 1992). As in most qualitative research, a higher level of inference was required and data collection and analysis supported each other (Hatch 2002).

Using the Constant Comparative Model (Glaser and Strauss, 1967; Miles and Huberman, 1994), the researcher reviewed the anecdotes together with the transcribed audio-recordings, self-reports, reflections and interview notes, as illustrated in Figure 5. The process of data analysis has to be eclectic and flexible, and thus the researcher was open to various ways of looking at information, exercised reflexivity and creativity when exploring the available data (Creswell, 1994; Hatch, 2002).

Figure 5

The Constant Comparative Method



3.4.1 Data analysis procedures

The analysis stage started with the examination of individual cases, a process called with-in case analysis (Merriam, 2009), in order to have a fuller understanding of the differences between professed beliefs and actual behaviour in relation to verbal interactions. Examination also helped to explain the reasons for any inconsistencies between the data. This process began soon after data collection had started. By starting early, the researcher was able to decide on how to determine the direction and focus of each subsequent observational visit. The researcher was then able to decide on the amount of detail and depth of information to include in the anecdotes and was able to record general field notes in order to capture incidental events and observable behaviour of children and teachers. This information subsequently helped to explain the participants' verbal behaviours. Interview guides were revised to help capture information not observable in the lesson, but were required to answer the research questions.

Each participant's observed behaviour in the classroom was recorded as anecdotes and compared with the transcribed audio-recordings. This comparison helped to ensure that key information was not left out. With each round of reading of the observation records, new insights and concerns arose (Hatch, 2002). For the purpose of this study, research questions and affective and instructional interaction indicators were utilised as 'frames of analysis' (Hatch, 2002, p.163). These frames specified how the data was examined and information decoded accordingly. Referring to Appendix J (p.183), indicators adapted from the High/Scope Preschool PQA were utilised as a decoding guide. Frequency of occurrences of each indicator was noted,

and a summary of these indicators was examined against those in the self-report. The transcribed audio-recordings were decoded for interactional interaction techniques of MacNaughton and Williams (2009) as shown in Table 3.2. Each technique was counted, and a percentage of each in relation to the total number of the seven techniques was established.

Table 3.2

Transcribed and Decoded Audio-recording

L/N	Who?	Recordings Folder CCT3	Corresponding actions of C or T or children's talk	Comments
16	T	you won around the world before?	child says that he won the game before	closed question
17	T	how did you win? how do you play this game?		open question
18	C	the person must stand behind the person who is sitting down. Then the fastest to say …	child attempts to explain the game and the teacher give him the words as an when necessary	
19	T	Hazel, can you…. We will wait for you….ok, who shall start first? How do we decide? There are so many children here.	Children gave an answer	closed question, open question, Feedback
20	T	He is here already ?		closed question
21	C	How about Iman start first?		
22	T	Iman start first		telling and instructing
23	T	But how are we going to decide who is going to start first		open question
24	C	….. Stone		
25	T	Scissors, paper stone?		closed question
26	T	That is a good idea, that is a good idea		feedback

The resultant observation record for each case was enriched and tables of affective interaction and instructional interaction indicators were collated. The same case was read over several times to look for underlying meanings, salient information, and eventually to arrive at an informed interpretation of the teacher's verbal behaviour in his/her context in accordance to supporting literature.

The researcher also decided to highlight significant and meaningful excerpts which served as powerful examples in the findings section. Without a tested framework for the micro-analysis process, interpreting, decoding, tabulating, organising and reorganising information became the recurring activity which the researcher was

engaged in, till a ‘logical’ and ‘evidence supported’ inference of the teacher’s verbal behaviour was derived.

Another cycle of re-reading of the observation records was then carried out, now with inferences constructed. The resulting document was compared with the participant’s self-report and triangulated with other corresponding information from the preliminary data form, post-teaching reflection and face-to-face interview notes. The case was then completed with enhanced inferences, called a case record (Merriam, 2009). Appendix K, p. 186 is an example of a case record.

Key patterns of behaviour related to the research questions and interaction indicators were colour coded. This was for ease of retrieval when referencing original data became necessary as the analysis process continued. The practice of coding and summarising reduced textual data to more manageable volumes. One feature of a qualitative study worth noting is the attention given to non-examples of recognised patterns or counter evidence (Hatch, 2002). These were scrutinised further to decide if they fitted the prevailing patterns or were contradictory to the proposed research questions and findings. This method of ensuring completeness in data analysis is another feature of the ‘constant comparative method’ (Glaser and Strauss, 1967).

Two summaries for each case were written, one for the affective interactions and the other for instructional interactions. They contained key observations, inferences, patterns, relationships and themes. This was followed by an overall summary of the case, which consisted of a feature suggested by Hatch (2002): ‘a one-sentence generalisation’. This generalisation spelt out the relationship of how patterns within each set of data served as an indication that analysis for that set of data was

completed. Excerpts that supported generalisation sentences were once again identified. They served as powerful messages because of their explanatory properties from participants to support the findings. The summary statement carried significant information which was to be compared and contrasted with all the other 30 cases. Each case record consisting of the above information was sent to the respective participants (Appendix L, p. 196) for verification of information accuracy, to gather feedback, and to review interpretations. This process ensured the internal validity of the findings. The process described above has been conceptualised in the framework illustrated in Figure 3, page 51.

Three terminologies: patterns, relationship and themes were used in the analysis and they are defined as follows. Patterns include similarities or differences and frequency of behaviour. Relationships refer to links between behaviours and possible explanations for them to happen. Themes are statements that brought similar ideas together.

Subsequently the researcher progressed to focus on the collective patterns of behaviour of early childhood educators in the sample, aggregating key observations, inferences, patterns, relationship and themes. Data was analysed according to the key research questions and sub-questions, providing descriptive analysis of beliefs and practices, teacher characteristics and conditions surrounding the lesson observed. Common areas were described in detail with supporting examples and direct quotations from participants. In this process of data analysis, personal theories of teachers emerged.

Patterns, such as a teacher's behaviour were presented together with a brief background of the teacher, the classroom setting and a summary of their beliefs and practices. This was derived from the declarative sheet, observations and interview. Categories of information were represented in matrices to aid systematic presentation and to demonstrate relationships. The segmented information (categories, codes and patterns) was then compared with those in the literature discussed in Chapter 2. The aim was to explore these links and propose an explanation as well as to identify possible causal links. These subsequently formed the framework for a qualitative narrative to emerge.

However, given that there were 30 individual cases, a substantive amount of analysis would arise. Hence it was appropriate to consider that a suitable statistical analysis as an alternative approach to ensure that there was sufficient rigour in the analysis of data. A Mann-Whitney U-Test was considered suitable since there were two sample sets, i.e. the kindergarten and child care teacher group and both sets of samples did not have the same numbers. Standard deviations, T-test and effect size results were used for comparison of results to ensure greater accuracy of the qualitative findings. Statistical Package for Social Sciences Version 18 for Windows (SPSS Inc., 2005) was utilised for the quantitative analysis of the data.

3.4.2 Internal validity

Creswell (1994) and Merriam (2009) said that in the language of post-positivist paradigm, which was being adopted in this study, "trustworthiness and authenticity" were used in relation to questions of validity and reliability. Internal validity is the

accuracy of information and the extent of which it matches reality. The following was undertaken:

I. Triangulation of data, through the use of multiple sources of evidence, for example, on-site observations, face-to-face interviews, and artefacts (lesson plans and reflective writings). They were suitable because required information involved processing (Cohen and Manion, 1994) and examination of documents.

II. Each participant was invited to assist in reviewing and verifying the findings, interpretations and conclusion of their own case record (Appendix L, p. 196). With this and the preceding tactic carried out, Yin (2009) explained that construct validity had been established.

III. An independent professional in the field of early childhood education, who was not involved in this study, was called upon to be an examiner.

3.4.3 Ethical considerations

For the contact process, permission to carry out the study from relevant authorities was sought and a transparent account of the true purpose of the research task and expectations was made available to the principals of schools and their participating teachers. This helped participants view the researcher as competent, trustworthy and accommodating (Cohen and Manion, 1994). It also allowed them to verify and voice personal concerns. In the negotiation process, written conditions and guarantees were given to participants to promise confidentiality. They were also given the opportunity for feedback, as mentioned in section 3.3.3 (p.68). Ethical limits on participants were crucial in that it had to be respectful and sensitive to their dignity and

not to be subversive (Cohen and Manion, 1994). This was especially so in the situation where participants may come to realise that their practices do not match professed beliefs and feel negatively about this. Thus, there had to be a ”balance between the rights of investigators to seek an understanding of human behaviour, and the rights and welfare of individuals who participated in the research” (Cohen and Manion, 1994, p. 361). Unlike quantitative research, where data collection methods could ensure anonymity, participants in this qualitative study were known to the researcher as they had to work closely. Researcher and participants thus had to maintain ‘a professional distance’. In the obligation to protect anonymity of participants and to reduce the effect of the researcher’s personal knowledge influencing the process, case-studies in the data reporting phrase were given alpha-numerical codes. When reporting of findings was carried out, participating teachers were referenced to the pseudo names.

The researcher viewed the actions in the classroom according to her own lens. She decided on what to focus on, and what was deemed to be important. Thus the researcher had to record what was observed rather than what should be observed (Wolcott, 1995), even though observations were interpretations at some levels (Le Compre and Schensul, 1999 cited in Hatch, 2002; Miles and Huberman, 1992). For example, the decision on the type of setting, the areas to give attention and the pertinent information to record, were all part and parcel of the researcher’s interpretive acts. Since the researcher had a substantial amount of influence, it was necessary that she also had a positive attitude towards reflexivity.

3.5 Outcomes of the study

Through this qualitative study, the researcher hoped to gain a deeper understanding of:

- The relationship between professed beliefs of teacher-child interactions and practices.
- The factors that influence or determine teachers' actions. Some of which are probably embedded in the teacher's viewpoint and personal traits. Other reasons are possibly the teacher's prior knowledge and experiences. There are also reasons external to the teacher but within the environment where he/she worked. Such factors included the educational philosophy of the school, the physical set up of the classroom and the quality of support from parents or leaders of the school.
- Whether beliefs are predictors of practices, or that practices in fact shapes and defines beliefs (McMullen, 1998; Wilcox-Herzog, Ward and Kontos,1998).

Such possibilities are likely to generate further questions for future research.

3.6 Strengths and limitations of the research approach

The research methodology used was understandably open to criticism similar to the cases cited in Smith (1978). This study would be considered an X-O or "one-shot case study", without any scientific certainty, and limited possibilities for continuity and expansion for future studies. It would probably not draw the attention of policy-makers as there were no extensive statistics to emphasise, and perhaps policy makers are too busy to go through the more qualitative details. However, the methodology used was justified as it was the best strategy to meet the purpose of the study (Smith, 1978 and

Yin, 2009). For the researcher, it was important to have questions that arose from casual observations answered. As an educator, there was important information to share with the community of learners and practitioners who were interested to have an outsider's perspective of what was happening in their daily work with children. The study served to bring awareness and understanding amongst practitioners in early years programmes, the voices and mindsets in the classrooms that made a great difference between good and mediocre practices. These were best achieved through three main sources of evidence: written documents, direct observations and interviews.

Multiple sources of evidence are a characteristic feature of case study data collection. This is a strength of the research methodology used. There was "convergence of evidence" (Yin, 2009, p. 117) making the results more precise and convincing.

It has been said that "analysis of case study evidence is one of the least developed" (Yin, 2009, p. 127), and a comprehensive computer-assistive tool is still lacking. This meant that the researcher had to manage the multiple sources of evidence more personally. This provided a greater and deeper understanding of the information whilst analysing and 'playing' with the data, in order to craft the story from the available evidence.

Even though there was a lack of guiding models for this specific area of study, it did not cause the study to be less legitimate. This was because there were a number of studies that skirted around the topic of beliefs of teacher-child interactions. In this multiple-case approach, each of the 30 individual cases shared some common characteristics such as:

(a) the minimum qualification of the participating teachers;

(b) the lessons observed were held indoor during the key lesson time; and

(c) the lessons observed were pre-planned lessons;

(d) the use of a common system of collecting and analysing data.

These characteristics bounded the cases categorically. In addition, the analysis of each case yielded rich real-life descriptions of each participating teacher's verbal interactions with children within a classroom phenomenon. Such information was necessary for a greater understanding of how various factors could have affected the teacher's verbal behaviour, which in turn could help in the improvement of practices. Yet, each of the 30 settings had its unique discourse because even if the physical environment could be cloned, the human environment would continue to display individual difference just as the teachers and children were individually different. The responses of the human element to the physical and material environment again would vary greatly based on one's perception and experiences. Thus there were considerable variations across the cases, giving an extensive amount of information and examples to draw from for analysis. There was also no conclusive factor or single explanation for teachers' verbal behaviour, which in turn created more questions to consider for future investigations. Such uncertainty is reflective of the endless possibilities to explain human behaviour. In turn the accuracy, validity and stability of the study (Merriam, 2009) were improved. These were strong reasons for choosing the multiple-case study approach. It produces more robust results when compared with single-case designs.

Although external validity is a known issue with case studies, the cases were generalisable to the purpose of this particular study. However, they are not necessarily applicable to another study of a similar nature (Yin, 2009).

3.7 Summary

The research questions outlined on page 50 were firstly to find out teachers' beliefs and perceptions about teacher-child interactions; secondly, to find out teachers' actual classroom behaviour; thirdly, to find out the differences between professed beliefs and observed behaviour, and the reasons for these differences. The three key questions formed the basis for the selection of the three basic data collection methods: written documents, direct observations and interviews.

The methods enabled triangulation of data and developed a more complete and coherent picture of each classroom setting. Forms for self-reports and reflections and guides for face-to-face interview were developed to facilitate data collection. Using the matrix adapted from the High/Scope Preschool PQA, professed beliefs in the participants' self-reports and the observed practices from transcribed audio-recordings and observation notes were compared and analysed for affective interactions. Instructional interactions were decoded from the transcribed audio-recording and frequency of the types of techniques tabulated for analysis. The Constant Comparative Model was adopted for the data analysis process for each of the 30 cases and after participants' validation was completed, all cases were aggregated to analyse patterns of verbal interactions and possible reasons for similarities and differences.

Although the qualitative approach to research is known for its high tolerance for flexibility and changes, after the piloting period, a basic framework was put in place. Even though there were limitations in the methodology employed, as with all other research methodologies, the complexity of some classroom happenings were captured by the painstaking approach of observation, transcription, reflection and analysis. The open-mindedness of the reader is then required for its exploratory nature.

CHAPTER 4

FINDINGS

4 Introduction

The purpose of this exploratory study was to help the researcher understand more deeply, teachers' beliefs and their verbal interactions with children during pre-planned lessons.

This chapter reports the findings to the research questions mentioned in Chapter 3 (p. 50). It sought to find out:

i. teachers' beliefs and perceptions about teacher-child (affective and instructional) interactions;

ii. teachers' actual interactions with children in the classroom; and

iii. the possible reasons for the mismatch of professed beliefs and teachers' actual interactions.

The analysis is collated from data from 30 early childhood educators from both kindergartens and child care centres collected over a period of three months. Referring to Chapter 3, page 52, data collection methods consisted of written documents, direct observations and interviews.

Written documents were obtained from participants through a series of templates for self-reports. They provided information on:

i. the types of participating schools;

ii. personal information of the participants including:

   a. years of working experience and home language;

b. general education and professional specialised training;

c. personal early childhood schooling experiences and current teaching experiences;

d. values and beliefs about how children learn;

e. beliefs about teacher-child verbal interactions;

f. perceived roles and goals set for children, and

g. factors that influence the process of lesson planning.

iii. lesson plans;

iv. post-teaching reflective notes on the lessons that were observed by the researcher.

Direct observations and audio-recordings which were validated with reflective notes and interviews, provided information on:

i. teacher-child affective and instructional interactions during pre-planned lessons;

ii. the classroom's physical and material environment and resources; and

iii. the provision of play and other learning activities.

The professed beliefs of all participants were then compared with the observed practices and conclusions about the relationship between background and context were drawn.

4.1 Profiles of participating schools

Information about the schools was obtained through direct observations, validated with telephone interviews and secondary sources such as brochures or

websites of the schools. Table 4.1 gives a summary of the different types of organisational set up for kindergartens and child care centres

Table 4.1
Participating Schools
(information from secondary sources)

Types	**Kindergartens**	**Types**	**Child Care Centres**	
Community Foundation (PCF)	6	Community Foundation (PCF)	1	Non-profit
Religiously Affiliated Org.	3	Voluntary Welfare Org. (VWO)	5	
Business Enterprise	0	Business Enterprise	4	For profit
Total number	9	Total number	10	

4.1.1 Kindergartens

The six PCF kindergartens and three religiously affiliated organisations (in Table 4.1) have philosophies that reflect the aspirations of the school and parents of children attending the school. Commonly PCF kindergarten's goal is to prepare children for formal education. Its aim is to provide a conducive or stimulating positive learning environment for children to develop their potential. However, three of six of these PCF kindergartens included have an additional individually written philosophy for each separate branch. Conversely, the religiously affiliated kindergartens aspire to nurture character and values through the addition of spiritual dimensions.

4.1.2 Child care centres

The child care centres from the PCF group share the same philosophy as their kindergarten counterparts. The five child care centres managed by VWOs aim to provide children with a quality environment that supports their holistic development and to instill in them the desire for life-long learning. A number of these centres include

moral values and children's well-being as part of their philosophy. All of the ten child care centres, either non-profit or business oriented, have very little variations in their written philosophies.

4.2 Characteristic features of classrooms

Across the 30 observed classrooms in the 19 schools, the physical environment, schedule and routines are organised in quite similar manner. However, there are four main distinct characteristic criteria for organising the layout of the physical environment as shown in Table 4.2.

Table 4.2
Nature of Classroom Environments
(information from direct observations)

Types	Features of physical and material environments		Number of schools / classrooms
1	A self-contained classroom space, fully or partially enclosed, consisting of an area for large group discussion and several learning areas where small group activities can take place.	A) Rich supply of materials and a print rich environment. Small group learning areas are well defined and have interesting ideas that provide good activities for children.	11 (7K & 4C)
		B) Average supply of materials and prints in the environment. Small group learning areas are adequately defined and have average activities for children.	9 (4K & 5C)
		C) Poor supply of materials and prints in the environment. Small group learning areas are minimally defined and have minimal activities for children.	8 (1K & 7C)
2	Large group discussion and small group activities are in different allocated areas of the school where large group discussion and small group activities can take place.	Large discussion room is sparse but the small group activity area has a rich supply of interesting materials.	2 (2 K)

Legend: K-kindergarten; C- Child Care Centre

4.3 Profile of participants

All 30 participating teachers are of Asian background, with ages ranging between 20 and 55 years. The years of working experience for the participants range from six months to 20 years. Twenty-five of these participants (83%) started their career in early childhood education or other children related work; the rest (17%) became early childhood educators after a career change.

Table 4.3

Summary of General Education and Professional Early Childhood (EC) Training

(information extracted from the Preliminary Data of Participants form)

General Education						Professional Specialised EC Training				
	Kindergarten Teachers (14)	**%**	**Child Care Teachers (16)**	**%**			**Kindergarten Teachers (14)**	**%**	**Child Care Teachers (16)**	**%**
GCE 'O' Level	10	71	12	75		Dip. in EC Teaching	7	50	10	63
GCE 'A' Level / Polytechnic Diploma (Dip.)	3	21	3	19		Dip. in EC Teaching & Leadership	6	42	4	25
University (Bachelor Degree) in various discipline	1	8	1	6		Bachelor Degree in ECE	1	8	2	12

More than 70% of participants from both the kindergartens and child care centres entered the field with a general education of GCE 'O' level; 19% to 21% entered with either a GCE 'A' level or a full-time Polytechnic (known as Community College or Tafe in other parts of the world) diploma; and 8% or less entered the field with a university education, unrelated to early childhood education (Table 4.3).

For professional preparation and training, more than 50% of participants had a Diploma in Early Childhood Care and Education –Teaching (DECCE-T) which is the minimum qualification in professional training delimitating participants in this study. 25% to 45% of participants received a Diploma in Early Childhood Care and Education - Leadership (DECCE-L) or the Diploma in Early Childhood Care and Education - Teaching and Leadership (DECCE-T & L), a qualification higher than the DECCE-T. Less than 12% obtained a professional Bachelor Degree in early childhood education.

Table 4.4

Professional Training Data

(information extracted from interviews with teachers)

Coverage of the teacher-child verbal interactions topic	Responses from teachers		
	Kindergarten Teachers	Child Care Teachers	Comments
a. Not covered	2	3	○ There was no module on this content area
b. Somewhat covered	10	12	○ There was no specific module. ○ There was some coverage embedded in modules such as Child Development, Language and Literacy, Effective Communication or Professional Development. ○ Content covered included asking open-ended and closed questions, listening, giving affirmation, modelling speech, tone of voice, speaking positively, and non-verbal gestures.
c. Fair coverage	1	1	
Sub–total (b & c)	11	13	
d. Comprehensive coverage	1	0	○ There was no specific module. ○ Strong focus on interactions. ○ Content covered included observing, questioning (especially open questions), listening and getting children to talk.
Total	14	16	

Although all training agencies are accredited, curriculum delivery differs as teachers attending different training agencies reported different understanding of what constitutes quality teacher-child verbal interactions. A summary is shown in Table 4.4.

The average number of years of teaching experience for kindergarten and child care participants was 11.5 and 7.2 years respectively, as shown below in Table 4.5. It was found that participants from child care centres had less years of teaching experience compared to those from kindergartens. In addition, data of home language of participants reflect the multi-racial and ethnic background of Singaporeans.

There was little difference between the two groups in terms of continuous professional development that participants had undertaken. Only two child care teachers did not attend prior professional development courses. Eleven participants from the kindergarten and also child care group had attended at least five continuous professional development sessions in the last year.

The teachers came from diverse language backgrounds. Only six spoke English at home and eight did not. Fifty per cent or more of the teachers spoke a mixture of English and one or two other languages.

Table 4.5

(A) Summary on Years of Teaching Experience

(information extracted from the Preliminary Data of Participants form)

No. of years of teaching experience	Kindergarten Teachers (14)	%	Child Care Teachers (16)	%	
≤ 5	1	7	8	50	
6 to 10	3	22	3	18	
11 to 15	8	57	3	18	median
≥16	2	14	2	14	
Average number of years of teaching experiences	11.5 years		7.2 years		

(B) Summary of Home Language of Teachers				
English only	3	21	3	19
English and one other language (Chinese/Malay/Tamil)	7	50	6	38
English and two other languages	1	8	2	13
English not spoken	3	21	5	30

Only a few participants did not attend kindergarten or child care programmes when they were children. Generally, those who had early childhood schooling experiences had more positive and pleasant experiences with their schools and teachers. Those who had negative and unpleasant experiences described their teachers as '*firm, fierce and unfriendly'.*

Table 4.6

Prior School Experiences of Participants during their Early Childhood Days

(information extracted from the Preliminary Data of Participants form)

Developmentally Inappropriate Experiences				DAP Experiences	Nil
Large group sessions, little interactions with teacher and other children	Teacher-directed lessons; children seated in front of the teacher; chalk and talk sessions.	Desk bound work with little movement; worksheets	Letters and number recitals and recognition; spellings and penmanship	Singing, music, stories and playing with toys	Did not attend pre-schools or could not recall experiences
5	6	9	5	3	2

When asked how lessons were conducted, nine out of ten participants recalled their own early childhood lessons to be developmentally inappropriate. They reported learning environments which were teacher-directed, usually in large groups, and also included desk-bound tasks that were developmentally inappropriate. Table 4.6 shows this information in greater detail. It is important to note that the participants only learn of the developmentally appropriate practice (DAP) or inappropriate terminology when they enter the field or embark on an early childhood training course.

Personal values which participants declared, in the Preliminary Data of Participants form, to be important for teachers, are categorised as such:

1) Personal attributes of teachers. Participants feel that they need to have

   "*an interest in learning, to be reflective, patient, flexible, honest, kind, respectful and diligent".*

2) Professional responsibilities of teachers. Participants believe that they need to be able to

   "listen to children, teach according to children's developmental levels and how they learn, … put theories into practice, guard children's self-esteem and build up their confidence".

   They also believe that it is important to be

   "nurturing, good role models and be responsible for children's learning". Besides

   "imparting knowledge, instilling values, … curiosity, … independence and responsibilities", it is necessary to

   "teach with a heart and make learning enjoyable".

The participants also feel that their values and beliefs can be modified by the following factors. *Training (7); reflective practice (5); exposure to new ideas (5); school expectations (2); parents' expectations (1); feelings (1); parents' expectations (1); inspiration from teachers and colleagues, government policies, and the governing body of the school (1). The figures in parenthesis indicate that the number of teachers citing each factor.*

All the above values of these participants have been collated from direct observations during key lessons of the day where large group and or small group teaching, discussions and play took place. The sessions were all conducted in the English language.

The participants' perception of their roles towards children, mentioned in the self-reports are: *facilitator (25), scaffolder (6), role model (4), educator (4), guardian (4), motivator (3), supporter and encourager (3), observer (3), researcher and investigator (3), counsellor and mentor (3), designer (3), friend, (2), listener (1), informer (1), and demonstrator (1).*

All of the participants chose more than one option, which is indicative of the multiple roles that the teachers have to shoulder.

4.4 Curriculum planning and management

Eight participants (27%) declared that they had to follow curriculum guidelines laid down by the leaders (principals, supervisors and consultants) of these schools. Nine participants (30%) were given the liberty to write learning plans for the children based on their own preference and understanding, while ten participants (33%) were allowed to modify the given curriculum and plan the lessons to meet the abilities, interests and needs of the children (Table 4.7). Additionally another three teacher-participants were given a free hand in writing the curriculum for their classes.

Table 4.7

Curriculum Planning and Management

(information extracted from the Pre-classroom Observation Questionnaire and Reflection form)

	Models	No. of Teachers	Kindergartens	Child Care Centres
1	Curriculum guidelines set by the school to be strictly adhered	8 (27%)	2	6
2	Curriculum guidelines set by the school but teachers can modify the requirements or plan their lesson, individually or with fellow teachers of the same level, according to their own preferences	9 (30%)	5	4
3	Curriculum guidelines set by the school, but teachers plan their own lessons according to the abilities, interests and needs of the children in the class	10 (33%)	5	5
4	The teachers have a free hand in writing the curriculum for their class or cluster of classes	3 (10%)	2	1
	Total	30	14	16

Direct observations revealed a strong presence of the teachers' agenda. More time was devoted to whole class teaching and activities than small group activities. Learning activities in most schools were highly structured, with little or no deviation from lesson plans prepared by the teachers, while tight class schedules were managed well with little variation to the curricular content. These features are similar to the observational study carried out by Chan (2010) in Hong Kong with nine kindergartens.

The above mentioned agenda was observed when the participants orchestrated their lessons, through supervising, instructing and directing children's actions. Hence the teachers' role can be considered to be similar to that of a 'technician'. It seemed that in order to cope with the tight classroom schedule, the teachers fulfilled the content

within the planned lesson time, which inevitably caused the children to rush through the learning activities. It was noted that only one participant had verbal interaction plans written out in her lesson plan.

4.4.1 Scheduling

In general, the kindergartens and child care centres differ in their daily schedule due to different distributions of activities within the time frame of the programme. In addition, different settings were believed to have different programme format. Tables 4.8 and 4.9 show a typical kindergarten and a child care schedule respectively.

Table 4.8

Daily Schedule for a Four Hours Kindergarten Programme

(information collated from a number of kindergartens)

Time	Activities
8:00 am	Greeting time/Sharing time *Sing-a-long, show and tell, shared reading, story time, finger play and rhymes.*
8:30 am	Directed activities *Teacher-facilitated small-group activities, independent work in learning centres, small-group reading and writing, mathematics activities, and creative art and craft.*
9:15 am	Outdoor play *Water play, sand play, gardening, and physical activities.*
9:45 am	Snack time
10:15 am	Music and movement *Listening, singing, drama, and playing musical instruments.*
10:45 am	Second language *Fun learning activities conducted in Mandarin.*
11:30 am	Free choice *Self-selected play activities*
	Other special activities –offered once a week/ month *Field trips, computer aided education, children cooking programme, science projects etc.*

Table 4.9

Daily Schedule for a Full-day Child Care Programme

(a collation from a number of child care centres)

Time	Activity
7:00 am	Arrival and activity of own choice *Self-selected play activities*
8:00 am	Breakfast time and experiential learning *E.g. Learning corner activities*
9:00 am	Core programmes *In both English and Chinese languages of 60 minutes each separated with small groups at learning centres or individual group activities or outdoor activities*
12:00 pm	Lunch and bath time
1:00 pm	Nap time
3:00 pm	Snack time
3:30 pm	Specialised programmes / Integrated learning experiences *Projects and programmes such as reading programme, art, music, science and physical activities*
5:00 pm	Sensory / Exploratory experiences *Learning centres and structured activities*
6:00 pm	Cleanup / Home sweet home

The difference between a kindergarten and a child care schedule is in the duration of each programme. Kindergartens tend to have a more detailed programme and staff feel there is the need to cover all of its core programme content (such as those lessons related, to literacy and numeracy) when children are in the school for 4 hours. Child care centres have a longer 12-hour day for teachers to pace their teaching and activities.

4.4.2 Learning formats

The lessons observed are summarised in Table 4.10. The duration of large group activity varied between schools, with majority of the participants spending a long period of time within these group activities. During this time, guidance talks (consisting of closed questions, and telling and instructing) took place most of the time and there was little time left for small group activities.

Each participant started with a large group discussions or circle time, in which the discussion was interactive or teacher-led, including the recollection of a previous lesson, introduction to a new theme and teaching specific topics. The large group session was followed by small group activities at learning centres, individual table top activities or large group games facilitated by the teacher. There were schools where follow-up small group or individual activities were not available for the children due to time constraints.

Table 4.10
Variations of Learning Formats
(information collated from direct observations)

	Types of lesson arrangements observed	*Kindergartens Teachers (#)	*Child Care Teachers (#)
1	Large group interactive session followed by small group or paired learning in well-defined learning areas with activities for children.	Sally (1)	Wee (1)
2	Large group interactive session followed by individual activities at the table.	Millie, Eddy (2)	(0)
3	Large group interactive session followed by games facilitated by the teacher	Ling, (1)	Mary, Jan, Lisa (3)
4	Large group interactive session without follow up small group or individual activities	Eve, Jess, Maria (3)	Vel (1)
5	Large group teacher-led session followed by small group paired learning in well-defined learning areas with activities for children.	Anna, Ash, Susan (3)	Mee (1)
6	Large group teacher-led session followed by individual activities at the table.	Loo (1)	Del (1)
7	Large group teacher-led session followed by games or experiments facilitated by the teacher	Hu, Dawn, (2)	Lee, Bee, Gee, Ju, Ranie, Rachel, Hee (7)
8	Large group teacher-led session without follow up small group or individual activities	Ang (1)	Ruth, Katie (2)

Legend: * pseudonyms

4.5 Beliefs about teacher-child verbal interactions

From the interviews, it was found that all participants placed verbal interaction between '6 and 10' (on a '0 to 10' scale). This correlates with a 'somewhat important' to very strong belief that verbal interactions play an important role in children's learning. The majority of participants from kindergartens (64%) and child care centres (100%) believed it to be important, as shown in Table 4.11.

Table 4.11
Teachers' Beliefs about Verbal Interactions in Children's Learning
(information extracted from interviews with teachers)

Scale	< 6	6	7	8	9	10	Total No. of Teachers
Kindergarten Teachers	0	1	4	8	0	1	14
Percentage				64%			
Child Care Teachers	0	0	0	7	5	4	16
Percentage				100%			

Legend: The ranking is on a 10 point scale from 0 (totally unimportant) to 10 (very important)

During the interviews, the participants were asked why teacher-child verbal interactions were important and what they hoped to achieve through their verbal interactions with children. As seen in Table 4.12, it was found that majority of teachers indicated that they needed to meet the objectives of the lesson. Assessing children's understanding was the second most frequently cited reason as child-talk is used for assessing children's learning, level of language and cognitive development. They felt that through child-talk, they could *"have a better understanding of children's abilities, needs and how they learn"*. Verbal interactions would also further *"enhance children's thinking, social skills and to be more vocal in the future".* In addition, through interactions, *"children construct understanding of concepts and the world around them".*

Table 4.12

Purpose of Verbal Interactions

(information extracted from interviews with teachers)

Purpose of verbal interactions	Number of participants (each citing one or more purposes)
To meet objectives of the lesson	21
To assess children's understanding	9
To be able to relate experiences verbally to others	6
To get children to ask questions	2
To build confidence in children	1

Table 4.13

Profile of Teachers

(information extracted from self-reports, audio-transcripts and anecdotes)

KT/ CCT	Psuedonym	Teacher-talk (%)	Child-talk(%)	Affective Interaction Scores	General Education	Professional Specialised Training	Years of Work Experiences as a ECE
	Wee	55	45	1.1	Polyechnic Diploma(Others)	Diploma in ECCE Teaching	4
	Eve	65	35	1.10	GCE 'O' Level	Diploma in ECCE Leadership	15
	Susan	52	48	0.97	University Degree	Diploma in ECCE Leadership	2
	Mee	50	50	0.96	University Degree	Diploma in ECCE Teaching	2.5
	Ling	49	51	0.94	GCE 'O' Level	Diploma in ECCE Leadership	19
	Jan	60	40	0.93	Polyechnic Diploma in ECE	Bachelor in Degree ECE (F/T)	1.5
	Sally	51	49	0.90	GCE 'O' Level	Diploma in ECCE Leadership	1.5
	Eddy	51	49	0.90	GCE 'O' Level	Diploma in ECCE Teaching	14
	Ash	50	50	0.86	GCE 'O' Level	Diploma in ECCE Teaching	12
	Vel	51	49	0.85	GCE 'O' Level	Diploma in ECCE Teaching	15
	Anna	55	45	0.80	GCE 'O' Level	Diploma in ECCE Teaching	15
	Mary	54	46	0.79	GCE 'O' Level	Diploma in ECCE Teaching	7
	Millie	49	51	0.77	GCE 'O' Level	Diploma in ECCE Teaching	7
	Bee	63	36	0.76	GCE 'O' Level	Diploma in ECCE Leadership	20
	Del	58	42	0.75	GCE 'O' Level	Diploma in ECCE Leadership	0.5
	Loo	60	40	0.70	GCE 'O' Level	Diploma in ECCE Teaching	7
	Rachel	51	49	0.70	Polyechnic Diploma(Others)	Diploma in ECCE Teaching	6
	Maria	49	51	0.69	Polyechnic Diploma(Others)	Bachelor Degree in ECE(P/T)	20
	Hu	51	49	0.67	GCE 'O' Level	Diploma in ECCE Leadership	10
	Lisa	50	50	0.66	GCE 'O' Level	Diploma in ECCE Teaching	14
	Dawn	53	47	0.53	GCE 'A' Level	Diploma in ECCE Teaching	14
	Lee	61	39	0.53	GCE 'O' Level	Bachelor Degree in ECE(P/T)	7
	Ju	67	33	0.53	GCE 'O' Level	Diploma in ECCE Leadership	2.5
	Hee	55	45	0.51	GCE 'O' Level	Diploma in ECCE Leadership	2
	Jess	63	37	0.50	GCE 'O' Level	Diploma in ECCE Leadership	12
	Ang	61	39	0.40	GCE 'A' Level	Diploma in ECCE Leadership	12
	Ruth	68	32	0.39	GCE 'O' Level	Diploma in ECCE Teaching	1.5
	Katie	64	36	0.31	GCE 'O' Level	Diploma in ECCE Teaching	12
	Ranie	77	23	0.25	GCE 'O' Level	Diploma in ECCE Leadership	4
	Gee	62	38	0.23	GCE 'O' Level	Diploma in ECCE Teaching	16

GCE'O'Level plus DECCET (14)	
Teacher-talk%	Child-talk%
55	45

GCE'O' Level plus DECCET n DECCEL (11)	
Teacher-talk%	Child-talk%
60	40

GCE'O' Level plus DECCET n DECCEL n Bachelor Degree in ECCE (3)	
Teacher-talk%	Child-talk%
57	43

Bachelor Degree in other discipline plus DECCET or DECCEL (2)	
Teacher-talk%	Child-talk%
51	49

Legend

Affective Interaction Scores	
>8	Very good
>6 to 8	Good
>4 to 6	Minimal
>2 to 4	Inadequate
<2	Poor

F/T	Full-time
P/T	Part-time
KT	Kindergaten Teacher
CCT	Child Care Teacher
Polytechnic Diploma is 3 years F/T	
ECCE	Early Child'd Care & Education

From the audio-transcripts, it was found that teachers and children do not have equal participation in verbal interactions. The frequency of teacher-talk and child-talk

Table 4.14
Summary of Data
(information extracted from self-reports, audio-transcripts and anecdotes)

KT/CCT	Psuedonym	Teacher -talk (%)	Child-talk(%)	Aff'tive Int. Scores	Gen Ed	Prof Training	work Exp	Cur Model	Lea Fomat	DAP	PLAY	Environ
3	Wee	55	45	1.10	POLY	DPT	4	3	1)	C1	A1	1A
3	Eve	65	35	1.10	O	DPL	15	2	4)	C2	A2	2
14	Susan	52	48	0.97	DEGREE	DPL	2	3	5)	C3	A2	1B
4	Mee	50	50	0.96	DEGREE	DPT	2.5	3	5)	C1	A2	1A
1	Ling	49	51	0.94	O	DPL	19	4	3)	C3	A3	1B
14	Jan	60	40	0.93	POLY	DEGREE	1.5	3	3)	C1	A2	1C
16	Sally	51	49	0.90	O	DPL	1.5	2	1)	C2	A3	1A
17	Eddy	51	49	0.90	O	DPT	14	2	2)	C3	A3	1A
12	Ash	50	50	0.86	O	DPT	12	3	2)	C1	A2	1A
13	Vel	51	49	0.85	O	DPT	15	3	4)	C1	A2	1C
4	Anna	55	45	0.80	O	DPT	15	2	5)	C3	A3	2
11	Mary	54	46	0.79	O	DPT	7	1	3)	C1	A1	1A
11	Millie	49	51	0.77	O	DPT	7	3	2)	C1	A1	1A
2	Bee	63	36	0.76	O	DPL	20	1	6)	C2	A2	1B
9	Del	58	42	0.75	O	DPL	0.5	4	6)	C2	A2	1B
18	Loo	60	40	0.70	O	DPT	7	2	6)	C2	A2	1B
15	Rachel	51	49	0.70	Poly	DPT	6	2	7)	C3	A3	1B
8	Maria	49	51	0.69	POLY	DEGREE	20	3	4)	C3	A1	1A
6	Hu	51	49	0.67	O	DPL	10	3	7)	C2	A3	1A
18	Lisa	50	50	0.66	O	DPT	14	2	3)	C1	A1	1A
10	Dawn	53	47	0.53	A	DPT	14	1	7)	C3	A2	1C
1	Lee	61	39	0.53	O	DEGREE	7	2	7)	C1	A1	1B
6	Ju	67	33	0.53	O	DPL	2.5	1	7)	C1	A4	1C
17	Hee	55	45	0.51	O	DPL	2	1	7)	C1	A1	1B
5	Jess	63	37	0.50	O	DPT	12	1	7)	C2	A1	1A
		299										
2	Ang	61	39	0.40	A	DPL	12	4	8)	C2	A3	1B
7	Ruth	68	32	0.39	O	DPT	1.5	1	8)	C2	A1	1C
8	Katie	64	36	0.31	O	DPT	12	2	8)	C1	A1	1C
10	Ranie	77	23	0.25	O	DPL	4	1	7)	C3	A3	1C
5	Gee	62	38	0.23	O	DPT	16	3	7)	C1	A2	1C

	Cur Model	
Legend	1	curr set by the school
	2	T cld modify
	3	Meet chn's needs
	4	autonomy
	Learning Fomat	
Legend	1)L Gp Inter & Sm Gp Activ	
	2) L Gp Inter & Indv Activ	
	3) L Gp Inter & Games	
	4) L Gp Inter only	
	5)L Gp T led & Sm Gp Activ	
	6) L Gp T led & Indiv Activ	
	7) L Gp T led & Games	
	8) L Gp T led only	
	Environment	
Legend	1A	Rich material well defined LC
	1B	Av material, adequately defined LC
	1C	Poor material, minimally defined LC
	2	Sparse large rm, separate activity rm
	Affective Interaction Scores	
Legend	>8	very good
	>6 to 8	good
	>4 to 6	minimal
	>2 to 4	inadequate
	Education & training	
Legend	O	GCE'O"Level
	A	GCE'A"Level
	Degree	University degree
	DPT	Diploma in ECCE Teaching
	DPL	Diploma in ECCELeadership
	Poly	Poly Diploma (Full-time)
Legend		Kindergarten Teacher
		Child Care Teacher

was counted and expressed as a percentage of total dialogic exchange. According to the results shown in Tables 4.13 and 4.14, the range of teacher-talk for both kindergarten and child care participants was from 49% to 77% and child-talk in kindergarten and child care centres ranges from 23% to 51%. Referring to Table 4.15, the average percentage of teacher-talk accounted for 57% of total dialogue. In addition, it was observed that:

- Firstly, the gap between teacher-talk and child-talk for child care centres was less favourable than that of the kindergartens. Although the Mann-Whitney Test indicated p=0.058 which is 0.8 per cent away from the statistical significance at the 0.05 level, the effect-size is 0.7 which is quite substantial.
- Secondly, a print-rich physical environment, with a generous supply of materials, well defined learning areas which has interesting activities for children, had a more favourable percentage of child-talk in the classroom.
- Thirdly, the model of curriculum planning which gave teachers some form of control or complete autonomy over planning, had more favourable teacher-child talk indicators than curriculum that was solely set by the school.
- Fourthly, a higher level of general education that included a Bachelor degree of a different discipline had a stronger influence than professional specialised training on the balance between teacher-talk and child-talk in the classroom.
- Finally, years of teaching experience did not surface as a strong contributing factor for quality teacher-child verbal interactions in the classroom.

Table 4.15

Teacher-talk vs. Child-talk

(information extracted from audio transcripts and anecdotes)

Overall	Teacher-talk (av.%)	Child-talk (av. %)
Kindergarten Teachers (14)	54	46
Child Care Teachers (16)	59	41
Environment	Teacher-talk (av. %)	Child-talk (av. %)
1 A) Rich supply of materials, print rich environment. Small group learning areas well defined and have interesting ideas and good activities for children. (11)	52	48
1 B) Average supply of materials and prints in the environment. Small group learning areas adequately defined and have average activities for children. (9)	57	43
1 C) Poor supply of materials and prints in the environment. Small group learning areas minimally defined and have minimal activities for children. (8)	63	37
2) Large discussion room is sparse but the small group activity area in a separate room has a rich supply of interesting materials. (2)	60	40
Model of Curriculum planning	Teachers-talk (av.%)	Child-talk (av.%)
1) Curriculum solely set by the school. (8)	63	37
2) Curriculum set by the school but teachers could modify them according to their own preferences. (9)	56	44
3) Curriculum set by the school but teachers plan their lessons according to the abilities, need and interests of the children. (10)	53	47
4) Teachers have autonomy in planning lessons. (3)	56	44
Education of teachers	Teacher-talk (av. %)	Child-talk (av. %)
General education without degree (28)	57	43
General education up to a Bachelor degree level (2)	51	49
Professional training – without Bachelor degree (27)	57	43
Professional training up to a Bachelor in EC (3)	57	43
Teaching experiences of teachers	Teacher-talk (av. %)	Child-talk (av. %)
≤ 5 years (10)	59	41
6 to 10 years (6)	54	46
11 to 15 years (10)	56	44
≥16 years (4)	56	44

Direct observations showed that not all of the children's articulations are heard and attended to by the teachers, which in turn affects child-initiated talk. The moderate level indicator (ii) for Affective Interactions, which looks at the '*use of a variety of strategies to encourage and support children's language and communication*', when examined against the instructional interactions records showed the following:

- When teachers use more verbal feedback and suggesting techniques, the number of child-talk and child-initiated questions are higher.
- When there is more telling and instructing, children do not exhibit such a disposition to find out what is happening or making the first move to speak, thus reducing the frequency of child-initiated talk.

4.6 Affective interactions

The 5-point Likert Scale utilised in the Pre-classroom Observation Questionnaire and Reflection (PcOQR) form for affective interaction beliefs was arranged to correspond with the 5 Level Indicators of the High/Scope Preschool Program Quality Assessment (PQA) tool. From the collated belief scores for each of the seven criteria of quality teacher-child interactions (see Appendix J p.183 and Tables 4.16 A and 4.16 B), it was shown that participants believed these affective interactions were very important (rating of 4) or extremely important (rating of 5). The seventh criterion where the participants was asked whether they would 'encourage children to interact with and turn to one another for assistance', received only 2 responses, which indicated 'fairly important' (rating of 3).

Table 4.16 A

Affective Interactions Indicators: Professed Beliefs and Observed Practices (Scores)

Kindergarten Teachers

(information extracted from self-reports, audio-transcripts and anecdotes)

Kindergarten Teachers		Professed Belief indicator						Observed practice																				
Adapted from High/Scope PQA for Affective Interactions criteria. Level indicator range: 1 to 5	Eve	Eve	Susan	Susan	Ling	Ling	Sally	Sally	Eddy	Eddy	Ash	Ash	Millie	Millie	Anna	Anna	Loo	Loo	Maria	Maria	Hu	Hu	Jess	Jess	Dawn	Dawn	Ang	Ang
i. Warm and caring atmosphere for children	4	5	5	4	4	5	4	5	4	5	4	5	5	5	4	4	4	5	5	5	4	5	5	5	5	4	5	3
ii. Use a variety of strategies to encourage and support child language and communication	4	3	4	4	4	3	4	4	4	3	4	4	5	4	4	3	5	2	5	4	5	3	5	2	4	2	5	1
iii. Participate as partners in children's play	4	4	3	3	5	3	5	5	4	2	4	0	5	3	3	0	4	3	4	0	4	1	5	0	5	3	4	0
iv. Encourage children's learning initiatives	4	5	4	5	4	5	5	4	4	4	4	4	5	4	3	5	3	3	4	5	5	1	5	2	5	2	5	1
v. Support and extend children's ideas and learning during group time	4	4	4	5	5	5	5	5	4	4	4	5	5	4	4	3	4	4	5	3	5	3	5	3	5	3	5	1
vi. Acknowledge individual children's accomplishments	4	4	5	4	5	4	5	3	4	4	5	5	5	3	4	4	4	1	5	3	5	3	5	3	5	2	5	3
vii. Encourage children to interact with & turn to one another for assistance	4	5	4	3	4	4	5	4	4	2	4	2	5	4	4	1	4	2	4	2	3	5	5	4	5	2	5	3
Total indicator	28	30	29	28	31	29	33	30	28	24	29	25	35	27	26	20	28	20	32	22	31	21	35	19	34	18	34	12
Affective Interaction Scores (observed/professed)	1.07		0.97		0.94		0.91		0.86		0.86		0.77		0.77		0.71		0.69		0.68		0.54		0.53		0.35	

LEGEND

Affective Interactions Level Indicators		Scores	
Not at all important	1	Very poor	0.2
Not very important	2	Indaequate	>0.2 to 0.4
Fairly important	3	Minmal	>0.4 to 0.6
Very important	4	Good (somewhat related)	>0.6 to 0.8
Extremely important	5	Very good (closely related)	>0.8

Table 4.16 B

Affective Interactions Indicators: Professed Beliefs and Observed Practices (Scores)

Child Care Teachers

(information extracted from self-reports, audio-transcripts and anecdotes)

Child Care Teacher		Professed Belief indicator					Observed practice																									
Adapted from High/Scope PQA for Affective Interactions criteria. Level indicator range: 1 to 5	Wee	Wee	Mee	Mee	Jan	Jan	Vel	Vel	Mary	Mary	Bee	Bee	Del	Del	Rachel	Rachel	Lisa	Lisa	Lee	Lee	Ju	Ju	Hee	Hee	Ruth	Ruth	Katie	Katie	Ranie	Ranie	Gee	Gee
i. Warm and caring atmosphere for children	5	5	4	5	4	5	5	5	5	5	5	5	5	5	5	4	5	4	5	3	5	3	5	4	4	4	5	2	4	1	5	1
ii. Use a variety of strategies to encourage and support child lang. and com.	4	3	4	4	4	3	5	4	5	4	4	3	5	4	4	2.5	5	4	5	1	5	1	5	3	4	2	5	2	4	1	5	1
iii. Participate as partners in children's play	5	5	4	5	4	0	4	3	5	0	5	3	4	4	5	3	5	4	5	0	4	1	5	4	4	0	5	0	4	1	4	1
iv. Encourage children's learning initiatives	4	5	4	3	4	5	5	5	4	5	5	3	4	3	5	3	5	3	5	5	5	3	5	2	4	1	5	2	4	1	5	1
v. Support and extend children's ideas and learning during group time	4	5	4	3	4	5	5	4	5	5	4	3	4	3	4	3	5	3	5	3	5	3	5	2	4	1	5	2	4	1	5	1
vi. Acknowledge individual children's accomplishments	4	5	4	4	5	4	5	3	5	5	5	5	5	3	5	3	5	3	5	5	5	3	5	2	4	1	5	3	4	1	5	1
vii. Encourage children to interact with & turn to one another for assistance	4	5	4	3	4	5	5	5	5	3	5	3	5	2	4	4	5	2	4	1	3	3	5	1	4	2	5	0	4	1	5	1
Total indicator score	30	33	28	27	29	27	34	29	34	27	33	25	32	24	32	22.5	35	23	34	18	32	17	35	18	28	11	35	11	28	7	34	7
Affective Interaction Scores (observed/professed)	1.10		0.96		0.93		0.85		0.79		0.76		0.75		0.70		0.66		0.53		0.53		0.51		0.39		0.31		0.25		0.21	

LEGEND

Affective Interactions Level Indicators		Scores	
Not at all important	1	Very poor	0.2
Not very important	2	Indaequate	>0.2 to 0.4
Fairly important	3	Minmal	>0.4 to 0.6
Very important	4	Good (somewhat related)	>0.6 to 0.8
Extremely important	5	Very good (closely related)	>0.8

However, compilation of direct observations revealed the full range of indicators ranging from level 1 (not at all important) to 5 (extremely important). This indicates that there was a mismatch or gap between the participants' professed beliefs in affective interactions and observed practices. Figures 6 and 7 provide a summary of this mismatch for kindergarten and child care teachers respectively, in this area. Figure 8 combines both groups of participants in order to have a better comparison. The closest match for beliefs and practices is for criterion (i), i.e. the provision of 'a warm and caring atmosphere for children'; and the widest gap is for criterion (iii), i.e. 'participate as partners in children's play'.

Figure 6

Affective Interactions of Kindergarten Teachers

A Comparison of Professed Beliefs and Observed Practices

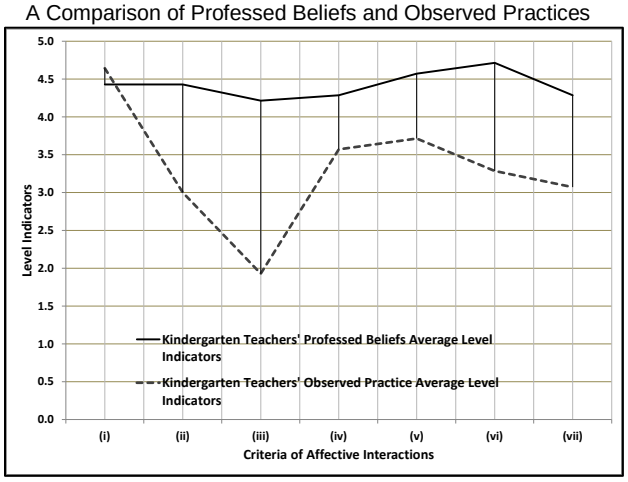


Figure 7

Affective Interactions of Child Care Teachers

A Comparison of Professed Beliefs and Observed Practices

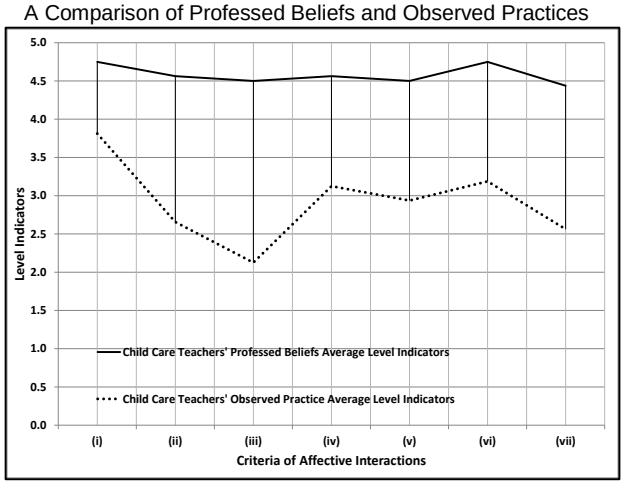


Figure 8

Affective Interactions of Kindergarten and Child Care Teachers

A Comparison of Professed Beliefs and Observed Practices

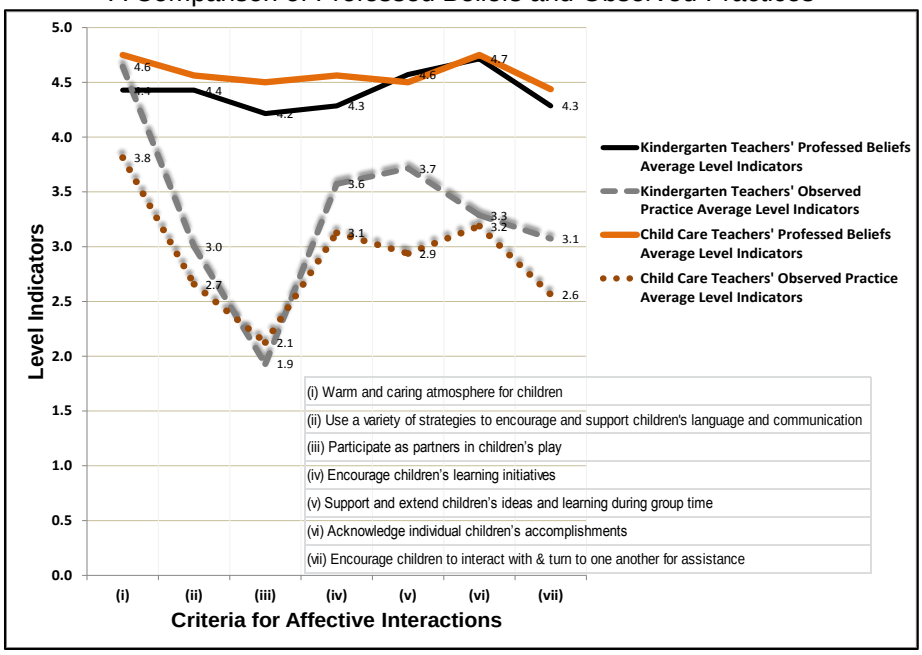
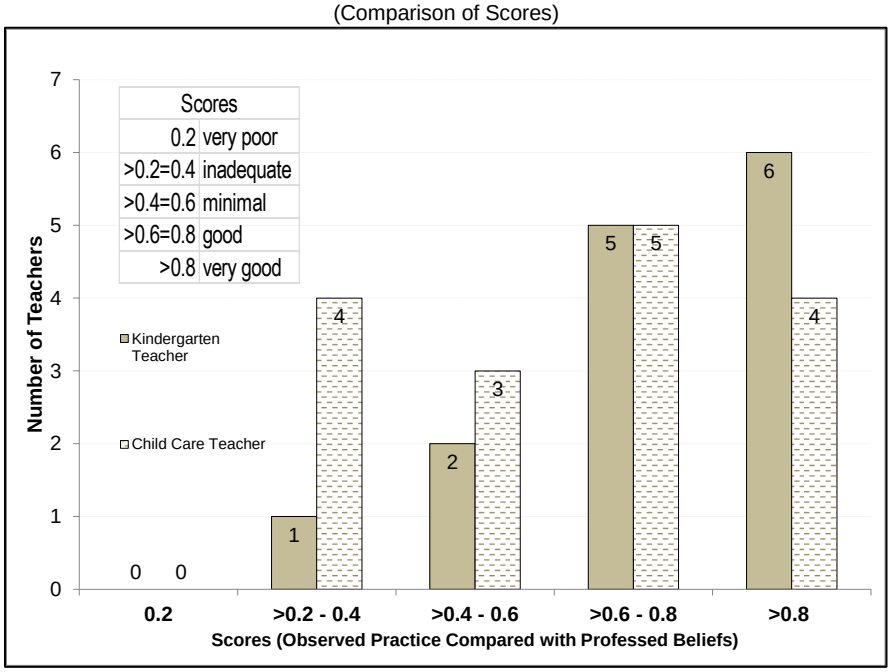


Figure 9

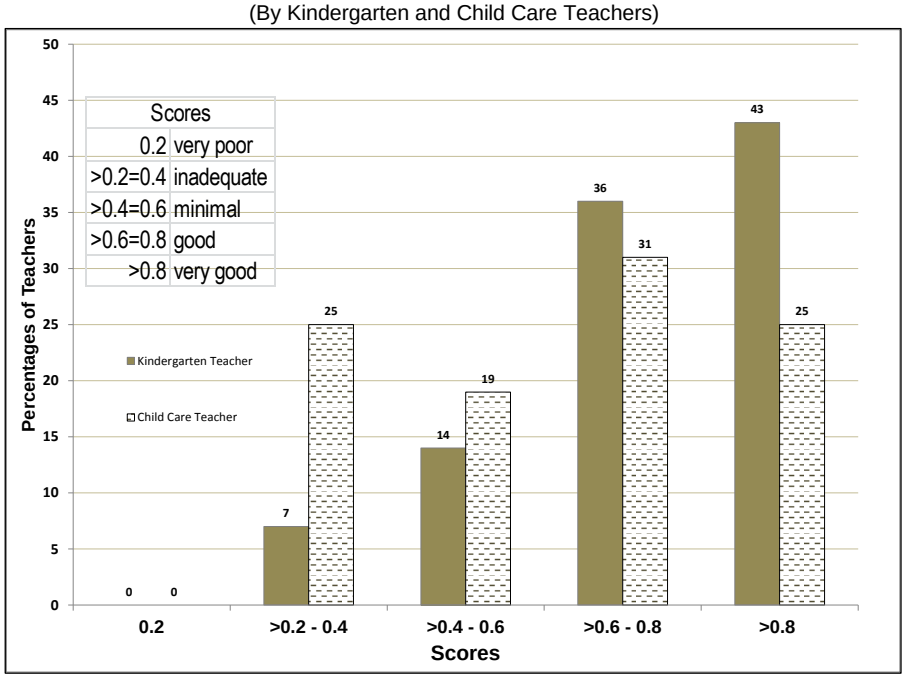
Affective Interactions – Observed Practices

(Comparison of Scores)



Each participant's summation of affective interaction level indicators was compared with their belief scores and expressed as a fraction. The results ranged from 0.2 to 1.0 with a regular interval of 0.2. The label for each interval was adopted from the 2004 EPPE project (Sylva et al. 2004). Despite the inconsistencies mentioned above between professed beliefs and observed practices, there were six kindergarten and four child care teachers who had a close-to-perfect match as show in Figure 9.

Figure 10
Observed Affective Interactions
(By Kindergarten and Child Care Teachers)



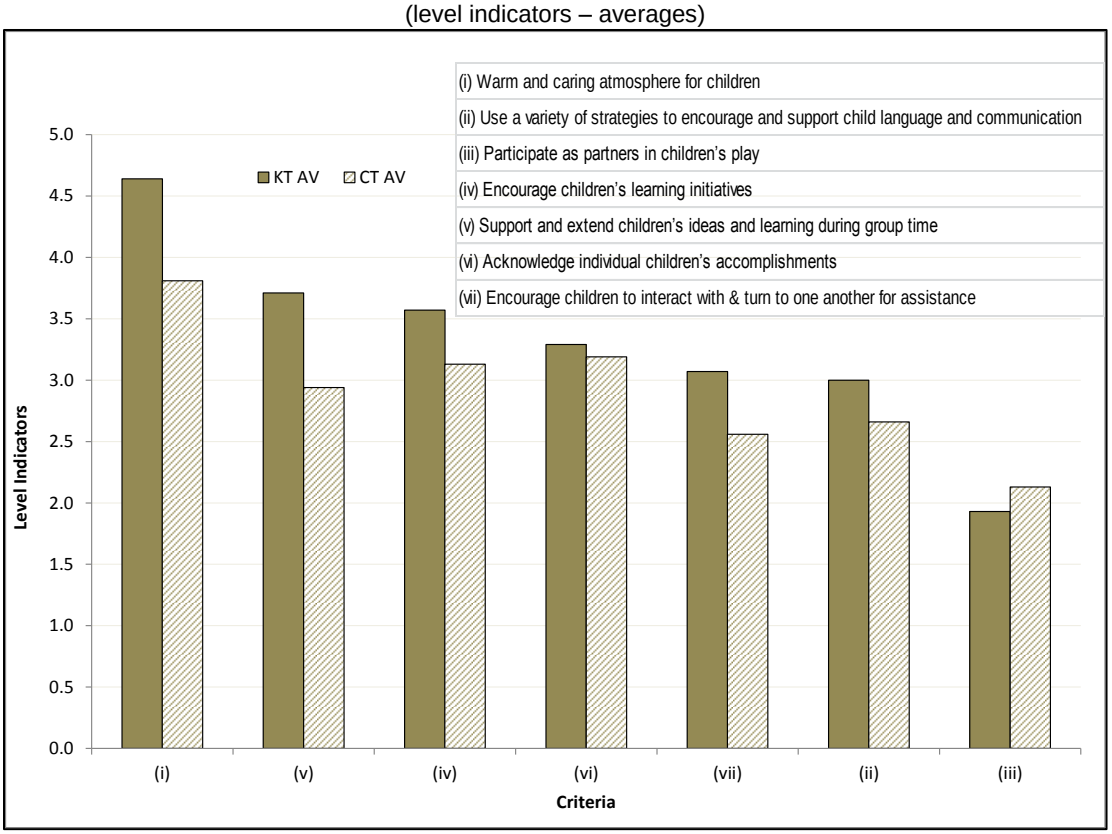
On further analysis, 21% of kindergarten teachers and 44% of child care teachers in the study were observed to display minimal to inadequate affective interactions. However, 79% of kindergarten teachers and 56% of child care teachers displayed good to very good affective interactions. It appears that the kindergarten teachers performed better than child care teachers in the area of affective interactions.

This could be related to the difference in years of teaching experience between kindergarten teachers and child care teachers, where kindergarten teachers tend to have more years of teaching experiences compared to child care teachers as mentioned in page 90. It could also be related to the better physical and material environment of the kindergarten classrooms (Table 4.14, p. 100). Figure 10 diagrammatically describes the findings just mentioned of both kindergarten and child care teachers.

The mean of all the affective interaction indicator levels are displayed in Figure 11 (from the highest to the lowest using kindergarten teachers' averages as the bench mark). There were uneven interaction patterns observed in relation to beliefs and practice for the seven criteria. As already mentioned, the provision of '*a warm and caring atmosphere for children'* was relatively similar to the participants' professed beliefs of this criterion, which meant that the fundamental roles of the teacher were met. The criterion of '*participation as partners in children's play'* was the lowest, revealing the lack of conditions necessary for play to take place. Contributing factors could be the daily schedule to be elaborated in section 4.10.4 (p.122) and the physical setup of the classroom to be elaborated in section 4.10.5 (p.122). However, more child care teachers appeared to be doing better in this area, which could be related to the whole-day operating hours of the child care programmes as compared to the typical four-hour kindergarten programmes. Longer programme hours would mean that teachers had more time for their planned lessons and would not have to feel pressured to complete the essential content and forego play as a strategy for children's learning. The indicator for the 'use of a variety of strategies to encourage and support children's

language and communication' was also relatively lower. As mentioned in section 4.5, page 98, on *'Beliefs about teacher-child verbal interaction'*, the indicator score is potentially related to the different types of instructional interaction techniques.

Figure 11
Affective Interactions of Kindergarten and Child Care Teachers
(level indicators – averages)



4.7 Instructional Interactions

From the scores (referring to Table 4.17) for each of the seven types of instructional interaction techniques, it was shown that majority of the participants believed that they practised the techniques either 'at all times' or 'sometimes'. This range is shown graphically on Figure 12. Only one participant indicated otherwise, as she had 'tried practising' the techniques, found it 'difficult to practise it' or the techniques were totally 'new information' to her.

Table 4.17
Instructional Interactions – Professed Beliefs and Observed Practices
(information extracted from self-reports, audio-transcripts and anecdotes)

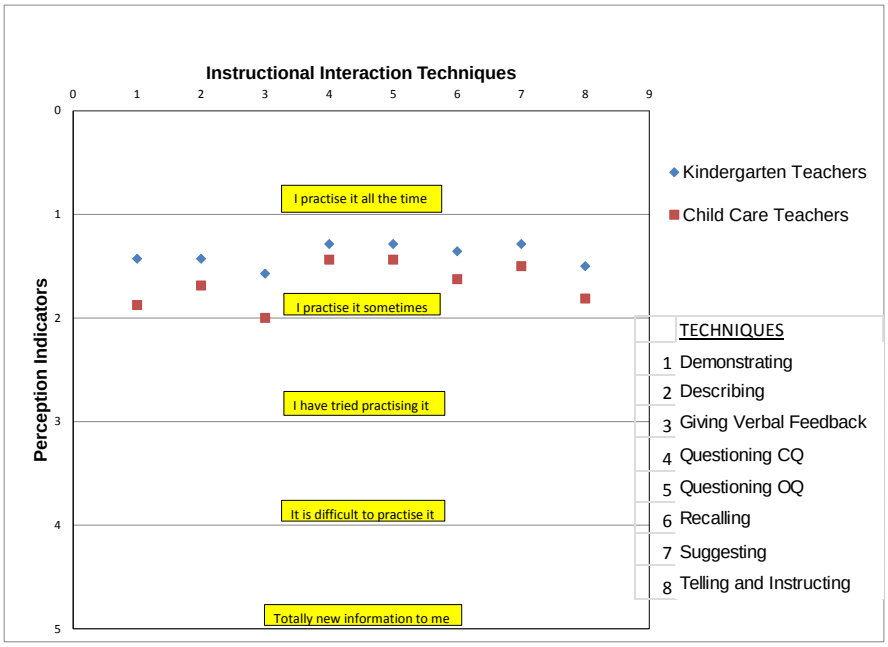
Instructional Interaction Indicators (professed beliefs vs observed practices) Kindergarten Teachers	Ling	Ling	Ang	Ang	Eve	Eve	Anna	Anna	Jess	Jess	Hu	Hu	Maria	Maria	Dawn	Dawn	Millie	Millie	Ash	Ash	Susan	Susan	Sally	Sally	Eddy	Eddy	Loo	Loo
Demonstrating	1	1	1	1	2	2	2	0	1	3	1	0	2	0	1	1	2	0	1	0	2	0	1	0	1	0	2	0
Describing	1	3	1	19	2	9	2	14	1	5	1	4	1	18	1	5	2	6	1	4	2	9	1	8	2	9	2	1
Giving Verbal Feedback	1	21	2	3	2	13	2	13	1	20	1	26	2	22	2	22	2	23	1	23	1	16	2	25	1	24	2	17
Questioning CQ	1	36	2	20	1	33	1	39	1	33	1	34	2	26	1	28	2	35	1	28	1	37	2	39	1	43	1	41
Questioning OQ	1	5	2	4	1	13	1	22	1	8	1	7	2	10	1	7	2	9	1	9	1	11	2	5	1	13	1	7
Recalling	1	5	2	3	1	1	2	3	1	0	1	1	2	7	1	1	1	5	1	7	1	5	2	2	1	2	2	1
Suggesting	1	3	2	1	1	13	1	2	1	6	1	5	2	13	1	9	1	11	1	9	1	6	2	13	1	2	2	10
Telling and Instructing	1	26	1	49	2	16	1	7	1	25	1	23	2	4	2	27	1	11	1	20	2	16	2	8	2	7	2	23
Total %		100		100		100		100		100		100		100		100		100		100		100		100		100		100
Affective Interaction Scores	0.94		0.35		1.07		0.77		0.54		0.68		0.69		0.53		0.77		0.86		0.97		0.91		0.86		0.71	
years of working experiences	19		12		15		15		12		10		20		14		7		12		2		1.5		14		7	

Instructional Interaction Indicators (professed beliefs vs observed practices) Child Care Teachers	Lee	Lee	Bee	Bee	Wee	Wee	Mee	Mee	Gee	Gee	Ju	Ju	Ruth	Ruth	Katie	Katie	Del	Del	Ranie	Ranie	Mary	Mary	Vel	Vel	Jan	Jan	Rachel	Rachel	Hee	Hee	Lisa	Lisa
Demonstrating	1	0	2	3	3	0	2	0	1	1	1	0	5	2	1	0.6	3	0	2	0	2	0	1	1	2	0	2	0	1	2	1	0
Describing	1	7	2	7	1	5	2	14	1	5	1	10	4	18	2	26	2	8	1	22	2	15	2	11	2	4	2	8	1	13	1	14
Giving Verbal Feedback	1	4	2	9	2	17	2	18	1	17	2	11	5	8	2	9	3	22	1	3	3	29	1	26	2	17	2	15	2	15	1	12
Questioning CQ	1	50	2	28	1	38	2	29	1	36	1	38	3	37	1	27	1	34	2	30	2	24	1	32	2	42	1	33	1	41	1	36
Questioning OQ	1	2	2	11	1	9	2	10	1	0	1	6	3	13	1	8	1	19	2	5	2	11	1	5	2	11	1	9	1	8	1	13
Recalling	1	1	3	2	2	1	2	2	1	1	1	2	5	2	1	6	1	1	1	0	2	0	1	2	2	0	1	3	1	1	1	3
Suggesting	1	2	1	2	1	5	2	12	1	1	1	2	5	6	1	0.6	1	5	1	0	2	7	1	8	2	13	2	9	1	9	1	8
Telling and Instructing	1	34	1	38	2	25	2	15	1	39	1	31	5	14	1	23	1	11	1	40	2	14	5	15	2	13	1	23	2	11	1	14
Total (%)		100		100		100		100		100		100		100		100		100		100		100		100		100		100		100		100
Affective Interaction Scores	0.53		0.76		1.10		0.96		0.21		0.53		0.39		0.31		0.75		0.25		0.79		0.85		0.93		0.70		0.51		0.66	
years of working experiences	7		20		4		2.5		16		2.5		1.5		12		0.5		4		7		15		1.5		6		2		14	

Legend			
I practise it at all time	1		Professed Beliefs
I practise it sometimes	2		Observed Practices
I have tried practising it	3		
It is difficult to practise it	4		
Totally new information to me	5		

Figure 12

Teachers' Perception of Usage of Instructional Interaction Techniques



The frequency of each technique that took place during the lesson was counted and cross-referenced with the anecdotes to understand 'how, where and why' they were used. The frequency count for each technique was calculated as a percentage of all techniques used for each individual participant.

Direct observation results revealed that a full range of instructional interactions was used by most participants. However, there were techniques that were more frequently and more heavily used than others. The questioning technique was found to have the highest percentage of participants. In view of its frequent occurrence it was then decided that this category could be analysed as 2 separate techniques, i.e. closed and open questioning. The two most repetitively used techniques were 'closed questioning', and 'telling and instructing', as shown in Figure 13 (for kindergarten teachers) and Figure 14 (for child care teachers). This result signifies a teacher-

directed approach to teaching practice. There were six participants using a good spread of the all seven techniques, however, closed questioning remains most prominent. Open questioning, suggesting, and giving verbal feedback which are instructional techniques that would further encourage and support children's language and communication (as mentioned in section 4.5, page 98) were little used.

Thus from the above account, there were discrepancies between the participants' perceived beliefs (that they had used all the seven instructional techniques either all the time or sometimes) and actual interactions (which showed that some techniques were more frequently used than others). It could then be said that there was only a weak link between the teachers' professed beliefs about the instructional interactions used and observed practices. This finding is supported by Cassidy and Lawrence (2000), Kontos and Dunn (1993), McMullan (1998), and Peled-Elhanan and Blum-Kulka (2006).

Figure 13
Instructional Interactions of Kindergarten Teachers
Average of Percentages

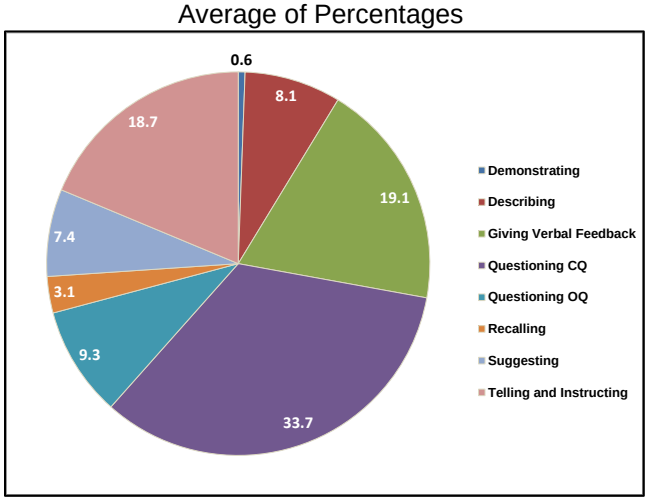
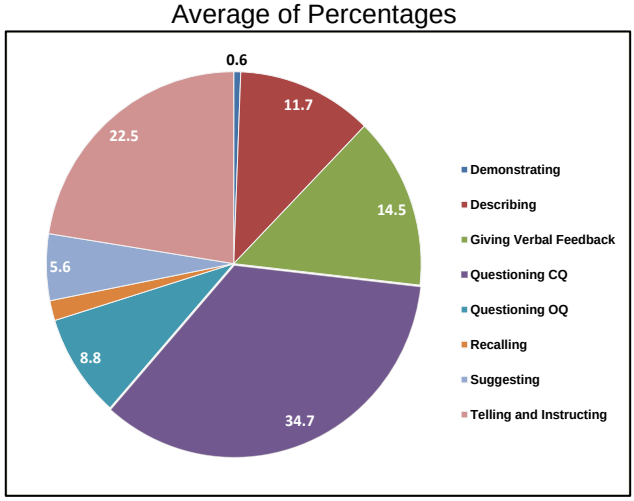


Figure 14
Instructional Interactions of Child Care Teachers
Average of Percentages



From the interviews with 30 participants it was found that all, except one, were unaware that of the various techniques of interactions that could be used for their

lessons. Referring to Table 4.4 (p. 89) the only technique taught during the Diploma training for the 30 participants was using open and closed questions. It was found that in the professional specialised training, the participants had lessons on the definitions, purpose, benefits, acceptable and unacceptable verbal interactions. The technique of carrying out a conversation with children was apparently not taught.

The participants' understanding of the term 'interactions' could have been affected by the lack of deeper coverage during training. Child care teacher Gee reflected that, interactions meant that,

> *"teachers listened to what children said"… "teachers gave instructions and encourage[d] children to try to get the correct answers"*

She was satisfied with her practice as the children, *"had responded to her questions and participated."* As for child care teacher Ruth, four out of the seven terms for instructional interaction were new information to her.

4.8 Other findings on teacher-child interactions

The wait time for children to respond to open questions was approximately one second. When their responses were not prompt, the participant would either answer her own question or follow up quickly with a closed question. In most cases the teachers' voice seemed to dominate in the classroom and the voices of the children were less frequently heard. There was little evidence of a two-way give and take dialogue. Although the participants believed that they interacted a lot with the children, the findings suggest otherwise.

While some participants made attempts to use open questions, there were several occasions where the children did not understand the question. The example below demonstrates that children give answers from their 'bank of information' which may not have answered the question posed.

T: *Today we are going to learn about?* (closed question)

C: *Octopus.*

T: *How do you know it's octopus?* (open question) [the teacher meant, "how do you know the topic is on octopus?"]

C: *Because it has eight legs.*

The inaccurate response received from the child could possibly be related to the lack of opportunity for the child to respond to open questions. It could also be due to the question being constructed incorrectly by the teacher.

Results revealed that in large group teaching sessions, a large percentage of closed questioning and telling and instructing techniques were used. The telling and instructing technique was thought to be an efficient way to achieve learning goals. When children were directed, less time was wasted on clarifying and answering questions from them. Thus the teacher could accomplish more within a shorter period of time and proceed to the next task on the agenda.

When feedback was given by the participant, it was often not spoken in a full sentence. It was observed that most of the participants would only articulate half the sentence. The example below occurred during a small group activity involving a dominos game.

C: *Ms Gee, can I see?* (a picture tile that was shown to another child)

T: *You have to wait for your turn.* (full feedback sentence would be, “You cannot see it now because you have to wait for your turn.”)

Finally, the teaching techniques used are dependent on the types of lessons conducted, whether it is the first time topic or theme is introduced or a follow up lesson. Affective interactions appear to be more significant in the overall quality of interactions rather than the techniques being used; and obtaining high score in affective interactions but exhibited teacher-directed approach does not mean that he/she is not an effective teacher.

4.9 Teacher’s self-evaluation of their lessons

It was found that the participants’ impression of their lessons, as shown in Table 4.18, did not match their individually attained indicators of affective interactions or optimal use of instructional interaction techniques. This suggests that their knowledge

Table 4.18

Participants’ Self-evaluation of Lessons vs. Observed Behaviour

(information extracted from interviews and post-teaching reflections)

Participants’ remarks My Performance:	Number of participants	Observations of the lessons show that :
needs improvement	8	(1) The lessons were found to exhibit a favourable selection of both affective and instructional interaction strategies.
was satisfactory	15	(2) Some lessons were of (1) and (3) types and some were average.
was better than expected	5	(3) The lessons were found to exhibit a limited range of affective and instructional interaction strategies.
was very good	2	

and skills of quality verbal interactions differs from what is thought to be usual or there was the lack of conscious awareness of their own performance, as mentioned in section 2.3.3, page 45.

4.10 Contributing factors for the differences between beliefs and practices

The factors presented here are not arranged in order of importance. The first factor leading to differences between beliefs and practices could be due to the individual participant's personal experience and attributes. Secondly, the manner in which philosophies, goals, visions and missions, which are specific to the schools involved in the study, are translated into practice also contributed potentially to this difference. Thirdly, schools do face different challenges from within the organisation, such as with the leadership and colleagues, and outside parties and stakeholders linked to the schools. Participants do not have much control over these external influences, as mentioned in page 47, Figure 2. Yin (2009) calls such influences, 'the context', which is different from the individual case that he refers to as 'the subject'.

4.10.1 Teachers' personal early childhood schooling experiences

Prior experiences, as a child in early childhood settings seem to have an impact on the participants' current practices. Consciously or unconsciously, their actions were in agreement with Phillip's (1995) suggestions that teachers' perceptions of their roles are reconstructions of memories of prior experiences. The following examples help to illustrate this relationship where participant's self-report written prior to the lesson, matched scenarios of the observed lesson.

(A) <u>Negative experiences</u>

Child care teacher Gee and Katie had practices that showed a strong link between their prior experiences of teaching and learning through the *"chalk board and worksheet*

approach." Child care teacher Lee stated in the Post Teaching Reflection that she tends to be task-oriented and it matched her earlier statement in the Preliminary Data of Participant form. She mentioned that as a child, she had teachers, *"who were most of the time strict, serious and task-oriented."*

(B) Positive experiences

Child care teacher Mary seemed to have taken after her own teacher's *"Caring, loving and patient"* disposition. She was also *"approachable, understanding, respectful of the children's views, opinion and decisions",* just like her own early childhood teacher. A similar trait was observed in child care teachers Mee and Jan and kindergarten teachers Eddy and Ash. Kindergarten teacher Ling had a balance of child-centered and teacher-directed approach which coincides with her experience of having a warm teacher, as well as one who practiced a teacher-directed approach.

(C) Highly structured experiences

A highly structured lesson was observed in kindergarten teacher Jess' class. She mentioned in her self-report that *"children learn best when they are taught… in a highly disciplined atmosphere",…* and where lessons are *"very structured".* Coincidentally, this form of teaching was related to the goals set by her current school, for example, *"to prepare children for Primary School"*. Kindergarten teacher Ang's teacher-directed experience was manifested in her style of teaching science. In the PcOQR forms she, *"agreed most of the time that children learn best when they are taught… in a highly*

disciplined atmosphere". This was also her prior teaching experience in a formal primary school setting.

D) Seating arrangement of children in the classroom

In kindergarten teacher Anna's classroom, she conducted the large group lesson seated in a large circle. Instead of having the children move around, she moved around the circle. The interaction pattern in her class was between teacher and children without any child-to-child interactions. Anna had written that her early childhood schooling experience required the children to *"sit at their respective seats and not move"* while the *"teacher did most of the teaching."*

4.10.2 Skills of teachers

Instructional interaction techniques (such as describing, giving verbal feedback and suggesting) were observed to be used by participants who showed greater verbal fluency. This was apparent in the cases of kindergarten teachers Eve, Anna and Susan and child care teachers Wee and Mee. This could be related to the general education attained by teachers rather than professional or specialised training as mentioned by Mashburn and Pianta (2010). However teacher Eve and Anna's general education were at GCE 'O' Level, while teachers Wee, Mee and Susan had tertiary education. Thus the link between verbal fluency and general education is not definite and may require further investigation.

The ability of the participants to manage the class and guide the children was evident through direct observation. Sixteen participants mentioned in the interview that

the children's behaviour got into the way of fulfilling their beliefs. Child care teacher Katie was not able to guide the children to behave in an appropriate manner, thus she was continuously reprimanding the children. In this scenario, the teacher-directed approach of telling and instructing was dominant. Conversely, kindergarten teacher Ang, agreed in her Post-teaching Reflection that her interaction style showed up as,

> *"talking or explaining most of the time and [being] firm while children are taught in a highly disciplined atmosphere."*

Child care teacher Del acknowledged that being only six months in the teaching job, managing children was the greatest challenge for her.

Eight teachers felt that the children in each class presented with very different abilities, and the divergent needs of their charges posed as a challenge during instruction time. Having to consider the needs of all children, child care teacher Lee acknowledged that knowledge of verbal interaction techniques and implementation are two different considerations and she had to adopt in her own words, *"the trial and error approach"* in order to manage the various demands during classroom interactions time. She could not find ready answers from her training for each challenge that she faces. This could be interpreted as teacher Lee's reflective process in her teaching pedagogy, since method 'A' did not work today, perhaps method 'B' could be used the next time. Thus interaction techniques appear to be affected by language skills, ability to manage the children and the diverse needs of children in the class which posed a challenge to application of knowledge.

4.10.3 Small group versus large group teaching and group size

The group size of each class is an important factor (Mashburn & Pianta, 2010). One kindergarten teacher, Eve noted that having a smaller group would mean less noise and more opportunities for the quieter children to speak. Waiting time for the quieter children would thus be reduced. When lessons require children to be involved in experimenting with learning materials, smaller groups of children ensure better teacher-child interactions. It was observed in child care teacher Lisa's classroom where she had to take ten children all by herself, there was a sharp increase in teacher-child talk after she re-grouped the children into smaller groups of three to four children for activities, compared with the earlier large group discussion circle. Teacher Lisa had a good score (0.66) for affective interaction and a good spread of different instructional interaction techniques was used. Her telling and instructing techniques used were 14%. In contrast, kindergarten teacher Ang (with 22 children) and child care teacher Ruth (with 15 children) taught the children as a large group, all at the same time throughout their forty-five minutes lesson. Both teacher Ang and Ruth scored inadequately (0.35 and 0.25 respectively) for affective interactions. Furthermore teacher Ang's use of telling and instructing techniques was 49%, and Ruth's was 40%. A higher percentage of telling and instructing techniques, is liken to a 'teacher talk, children follow' approach. This means that other techniques that involve more two-way dialogue would be reduced. Small group teaching is favoured over large group as the former arrangement improves teacher-child verbal interactions.

4.10.4 Time and schedule

Kindergarten teacher Loo acknowledged in her reflections that there was insufficient time given to children for thinking. Another five teachers emphasised the need to overcome the challenge of time constraints on a daily basis. Child care teacher Lee indicated time constraints in the Pre-classroom Observation-Questionnaire and Reflection form, Post-teaching Reflection and interview following her lesson. She said that, *"the lesson had to be completed within the time frame of the overall curriculum."* Time is a key determinant for the participants' choice of teaching techniques and kindergarten teacher Ash said that it had affected her beliefs about how children learn and her role in incorporating verbal interactions that would aid children's learning.

4.10.5 Absence of play during the main lesson period

Time was also observed to be the reason for six teachers' decision to incorporate play in the main lesson of the day or to leave it out of the lesson plan. Where play was not planned to be part of key activities, participants commonly functioned as instructors. For example, in the classes of kindergarten teachers Ling and Jess, both were observed to provide freely chosen play only as a reward for completion of work. The two participants had more than the average 20.6% of telling and instructing usage (with Ling, 26% and Jess, 25%). Where play was planned as a structured or freely chosen activity, as in the case of child care teacher Lisa (14%) and kindergarten teacher Sally (8%), the percentage of telling and instructing usage was far below the average percentage.

4.10.6 Physical and material environment

The physical and material environments also have an important role to play in the quality of interactions, as shown in the cases of child care teachers Wee and Mee and kindergarten teacher Sally. Their classroom physical environment was self-contained with rich supply of materials that were accessible to children. The sitting arrangement for children was in small clusters which encouraged small group activities. All three cases scored very high on affective interactions indicators (above 0.90).

In the case where materials are abundant in supply but is only accessible to the teacher, and the sitting arrangements of the children is meant for large group teaching, as in the case of teacher Ang, direct instructions was used and 49% of instructional interactions consisted of telling and instructing. Affective interactions also had a low score of 0.4. Similarly the classroom of kindergarten teacher Ling was arranged in such a manner that there was workspaces and chairs for each child so that all the children could work on the same task at a given time. Such provisions and physical arrangements, also evident in the classroom of child care teacher Gee, encouraged whole group teaching most of the time.

Where both material environment and the physical sitting arrangements are not supportive conditions for exploration, such as the case of child care teacher Katie, a more teacher-centered and teacher-directed approach has to be used instead of lessons delivered through a hands-on mode. Some other teachers such as child care teacher Hee, acknowledged that the open classroom concept coupled with the lack of space, meant that classes had to be closer to each other. This in turn raised nose level and teachers' voices had to be raised too and telling and instructing was the most

feasible method for teacher Hee to teach. On the other hand, the classroom space of child care teacher Vel, of five meters by six meters, was barely sufficient for the 15 Kindergarten-One children, let alone space for small group activities. However, this limited physical condition of the classroom did not affect teacher Vel's interactions with children. She had a high score of 0.85 for affective interactions and a low of 15% usage of telling and instructing techniques.

4.10.7 Support from leaders and expectations of colleagues

Two teachers, Mary and Ling, mentioned leaders and colleagues as the source of support or challenge to a play-oriented, interaction-focused curriculum. Kindergarten teacher Ling lamented that a colleague at a higher level expected the children to be ready when they move up a level. Overall, the leaders of the participating schools were probably supportive, as their agreement to participate in this study is an indication of their open-mindedness. Stipek and Blyer (1997) cautioned that factors external to the teachers, such as the lack of support from leaders and colleagues could hinder teachers from putting beliefs into practice.

4.10.8 Support and perceptions of parents

Teachers like Lee and Ling were mindful of parents' perceptions of school readiness. These expectations had an apparent influence on how they delivered their lessons. Teacher, Del clarified that, *"All the lessons [could not] be hands-on because parents demand[ed] to see certain outcomes such as worksheets to understand how their children were performing in school".*

Six participants brought up parents' concerns about academic rather than social learning skills and five others interviewed felt that parents needed to support the agenda of the school.

4.10.9 Culture of correctness

Child care teacher Gee reflected that the nature of her interaction was *"to try to get the correct answers"* from the children. This appeared to dictate the need to use telling and instructing and a closed question technique. The same pattern was observed in other cases, however only teacher Gee expressed her thoughts openly. Constant testing through the use of closed questions, and the culture where children were required to give correct answers was very strong. The culture of correctness is a credible explanation for the gap between beliefs and practices for the participants.

4.10.10 Reflective practice

Referring to Table 4.18, page 116 again, participants who gave feedback, during the interview, on how to improve future lessons were also those whose affective interaction practices were consistent with their professed beliefs. Teachers Eve, Sally, Wee, Mee and Mary belonged to this group. Reflective practice helps to close the gap between beliefs and practices. The participants who felt that they had done well or were satisfied with their verbal interactions were those teachers whose affective interaction practices were not consistent with their professed beliefs (such as the case of child care teachers Ju, Katie, and Ranie).

4.11 Summary

Thirty participants in the study which consisted of 14 kindergarten teachers and 16 child care teachers came from nine kindergartens and ten child care centres. Their full sessions of lessons were observed, audio-recorded and transcribed. Self-reports and reflections of participants and interviews conducted enabled for the triangulation of data. Case records (similar to the example in Appendix K, p.186) were generated for each case in the study for verification by the participants.

Participants' minimum general and professional qualifications (GCE 'O' level and a Diploma in Early Childhood Care and Education–Teaching) were also the latest requirements set by the Pre-school Qualification Accreditation Committee in 2009. The majority of the participants who had gone to pre-schools had experiences that were generally developmentally inappropriate (such as large group learning, teacher-directed, chalk and talk and desk bound lessons) and these as well as their qualifications were found to have an important influence on the teachers' classroom practices.

The schools practised a range of curriculum planning and management style, from tight control over curriculum guidelines to one where teachers were given autonomy in planning for the children in the class. The learning format used by the participants was a result of the combination of the model of planning and the physical and material environment of the school.

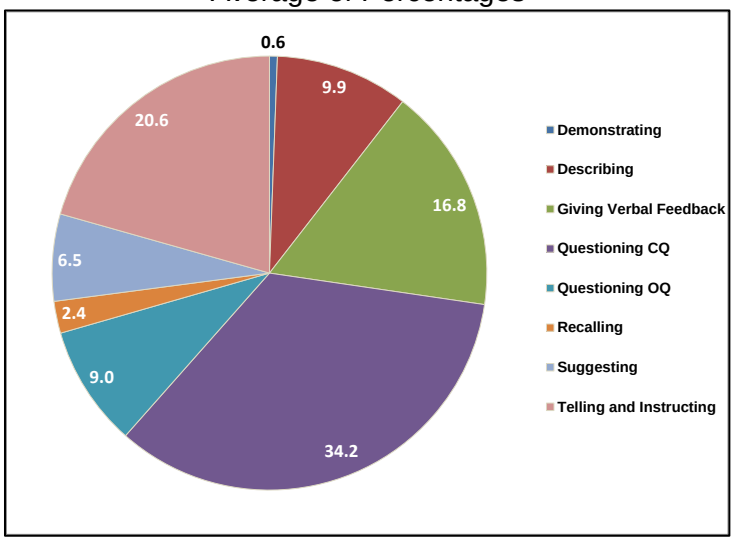
There was more teacher-talk and less child-talk in child care settings compared with the kindergarten settings. Overall, affective interaction's beliefs and practices indicators showed that none for the participants were observed to have a perfect match between practices and beliefs. Twenty per cent of the participants had practices that

match their beliefs in four out of the seven (which is about half of the) affective interaction criteria. Overall, the strongest link between beliefs and practices was in the area of providing a warm and caring atmosphere for children and the weakest link was in the participation of children's play (as shown in Figure 11. p. 110).

Table 4.19
Summary of Affective Interactions: Beliefs and Practices

Relationship between beliefs and practices for affective interactions		No. of Teachers (n=30)	Percentages
Beliefs and practices that match	6 out of the 7 criteria	2	7
	5 out of the 7 criteria	1	3
	4 out of the 7 criteria	3	10
	3 out of the 7 criteria	7	23
	2 out of the 7 criteria	5	17
	1 out of the 7 criteria	5	17
	zero match	7	23

Figure 15
Instructional Interactions of Kindergarten and Child Care Teachers
Average of Percentages



In the area of instructional interactions, almost all the participants believed that they use the seven instructional interaction techniques sometimes. The observed practice showed that the questioning technique, in particular closed questioning (which

accounted for 80% of all questions asked) was the most frequently used technique, followed by telling and instructing as shown in Figure 15.

Influences on the belief-practice relationship were identified to be as follows, for discussion in the next chapter. Teachers' education level and training and their prior early childhood schooling experiences; the education, training and skills of teachers; curriculum planning and management; the physical and material environment and learning format adopted by the teacher; support from parents of the school; the culture of correctness and reflective practice.

CHAPTER 5

DISCUSSION

5 Introduction

The ensuing discussion is not intended to be representative of the practices of all early childhood educators in Singapore. It serves to help the researcher as a practitioner gain greater insight to the teacher-child verbal interactions which for most part are not presented. However, these interactions have important implications for children's learning and data from this research can provide useful information for teachers, teacher educators and policy makers.

The purpose of this study was to investigate the differences in teachers' professed beliefs of teacher-child verbal interaction in the classrooms with observed practices and to the reasons for any misalignment. In analysing the multiple-case study, drawing relationship of information from various sources of evidence (such as written documents, direct observations and interviews), findings indicated that the practitioners' affective and instructional interactions differed from their professed beliefs and perceptions in this aspect. This is inconsistent with Torff and Warburton's report (2005) which stated that teachers' beliefs are a predictor of classroom practices. However, consistent with Ros-Voseles and Fowler-Haughey (2007) (p. 57) findings of teachers '*providing a warm and caring atmosphere'* for children, the participants in this study fulfilled that fundamental role. They also fulfilled the principle in the Kindergarten Curriculum Framework (MOE, 2003) of "providing a nurturing and positive environment". The teachers in this study demonstrated the direct instructional approach of having

learning planned and structured with directed activities as recommended by the Kindergarten Curriculum Framework (MOE, 2003). In terms of teaching approach, according to Katz (2001), framework for teaching approaches guides and determines the role of the teacher. Besides how teachers' roles are determined, this study also revealed that teachers' qualification have an impact on teacher-child interactions.

5.1 Early childhood settings: the qualifications, training and experiences of teachers

The categories of participating early childhood settings in this study (shown in Table 4.1, p. 86) are similar to the general landscape of kindergartens and child care centres in Singapore. Although they differ in organisational origins, their written philosophies, classroom features and curriculum content have very few dissimilarities. Yet, these apparently minute differences, when analysed using the tools employed in this study, were found to have some bearing on teacher-child verbal interaction practices because of the manner in which lessons are conducted. This will be discussed in greater detail (in sections 5.2.1 to 5.2.3, pp. 136 to 150) to the influences which Yin (2009) called context (mentioned in 4.10, p. 117).

The profile of teachers as shown in Table 4.13 (p. 99), demonstrates the influence on the nature of teacher-child verbal interactions. This in turn is shown by the affective interaction indicator scores attained by the teachers and the teacher-talk and child-talk percentages.

The four observations related to qualifications and training that emerged are presented below in order of importance as determined mainly through qualitative analysis in this study except for the statistical verification mentioned on page 101:

i. Firstly, teachers who obtained a tertiary general education in a non-early childhood related field prior to entering the early childhood field but embarked on a professional specialised training in the Diploma in Early Childhood Care and Education-Teaching (DECCE-T) or leadership (DECCE-L) path scored highest in affective interaction (indicator showing *very good* scores, >0.8). Their percentage of teacher-talk (51%) to child-talk (49%) was around the somewhat more ideal situation, which is a balance of teacher-child talk.

ii. Secondly, teachers who obtained a GCE 'O' Level certificate prior to entering the early childhood field and had professional specialised DECCE-T training, had an affective interaction indicator scores spanning from very good to inadequate. In addition, they scored an average of 55% teacher-talk and 45% child-talk, a less favourable scenario. The influencing factors affecting teacher-child verbal interactions of this group are discussed in 5.2.1, page 136.

iii. Thirdly, teachers in addition to category (ii) who obtained an additional higher level professional specialised training of Diploma in Early Childhood Care and Education-Leadership (DECCE-L), performed similarly in affective category. However, their averages of 60% teacher-talk and 40% child-talk are even less favourable than that of the teacher in category (ii). The additional leadership training did not appear to result in an improvement in teacher-child verbal interactions, in fact, it is even slightly worse. This can be attributed to the course content which focuses on administration, management, leadership and policies.

iv. Lastly, teachers in addition to category (iii.) who embarked on a professional degree in early childhood education, showed performance patterns between the

DECCE-T and DECCE-L trained teachers. The professional specialised training at tertiary level which is thought to equip teachers in higher quality care and education did not appear to make a huge difference on teacher-child verbal interactions in the classroom.

The findings discussed have been consistent with the controversial research presented in the following paragraph.

Research by Arnett (1989), and Howes and Stewart (1987) showed that teachers with tertiary general education demonstrated greater sensitivity and involvement towards children in their interactions. While Kontos and Wilcox-Herzog (2003) and McMullan (1998) concurred that more coherent professional specialised training results in better interaction pattern and better scores in beliefs and practices, Mashburn and Pianta (2010) argued that there has been little evidence of positive outcomes as a result of current conventional knowledge-based professional development and training. As such, whether general education continues to have a greater impact on teacher-child interactions in the classroom than professional specialised training, is apparently debatable.

Based on the above discussion, it seems that the Ministry of Education's (MOE) move to raise the bar for both general education and professional specialised training in January 2009 (as mentioned in Chapter 1, pp. 12-13) was a step in the right direction. However, it should be noted that the MOE had only considered GCE 'O' Level (five credits passes) as the base-line academic qualification while research refers to tertiary general education as making the difference in the teaching and learning practices of

teachers. Besides teachers' general education, this study also examines if teaching experience influenced teacher-child interactions.

In this study, the participants had an average of nine years of teaching experience. However, teaching experience generally did not appear to contribute to the nature of the interactions observed, in terms of teacher-child talk percentages as shown on, Table 4.15, page 102. Nonetheless teaching experience did have some important influence on certain isolated cases. The first example will be kindergarten teachers Eve and Anna. Both teachers had Type 2 physical and material environment classrooms (Table 4.2, p. 87) and carried out large group discussion sessions with children in a large sparse room; yet they were able to provide a rich affective interaction atmosphere. Eve and Anna (both with general education - GCE 'O' Level) had 15 years of teaching experience and had acquired a reasonable amount of skills to manage a large group of children competently. In the case of child care teacher Vel (also with GCE 'O' Level), her classroom was the Type 1C physical and material environment (the poorest of the four categories); yet she was able to take advantage of the limited resources and use what was available to plan for an interactive lesson that met the needs of the children in her class.

Besides the teachers' classroom experiences, the teachers' personal experiences in pre-school as a child, were also taken into account. Twenty-eight out of 30 participants in the study had gone to pre-schools when they were young. These teachers testified to the power of prior experience on practice, supporting Phillip's (1995) postulation of the relationship between teachers understanding of their current roles and what they recall from past memories (p. 16). However, they also had

experienced developmentally inappropriate practices during their childhood (Table 4.6, p. 91). As such, a number of teachers felt that training could expose them to developmentally appropriate practices and help modify their beliefs. How then do beliefs influence practices?

5.2 Teacher-child verbal interactions: beliefs and practices

Both interviews (Table 4.11, p. 98) and self-reports showed consistency of participants' professed beliefs on the importance of affective and instructional interactions to children's learning (Figure 8, p. 107 and Figure 12, p. 112). For affective interactions, the average level indicator was above 4 (with 5 being the highest level). For instructional interactions on average, teachers practised the seven interaction techniques '*sometimes',* which is just one level below '*all the time'.* The consistent results showed that teachers with their professional specialised training, continuous professional development and work experience had accumulated good head knowledge of what constitutes quality early childhood education, classroom practices and verbal communication.

A comparison of the results shown o**n** Figures 6, 7, 12, 13 and 14 (pages, 106, 112 and 113) suggested that there were gaps between beliefs and practices in several affective interaction criteria and the various instructional interaction techniques were used disproportionately**.** These inconsistencies between beliefs and practices are supported by Cassidy and Lawrence (2000), Kontos and Dunn (1993), McMullen (1998) and Peled-Elhanan and Blum-Kulka (2006),

Due to the lack of literature information available on the optimal or ideal proportion for individual instructional interaction technique to be used; and the lack of a clearly identified relationship between the techniques used and the types of lessons planned and conducted, a more deductive approach was employed to analyse the data. Each teacher's percentage usage of techniques was compared with the average percentages of both kindergarten and child care teachers. Other significant patterns observed were also brought up for analysis and discussion. One observed practice is the high usage of closed-questions and telling and instructing, which resulted in teacher-talk dominating over child-talk with teacher-directedness as the approach used in most schools. Referring to Table 4.15 (p. 102), the average teacher-talk was 57% versus child-talk 43%. Kontos and Dunn (1993) and Tu and Hsiao, (2008) found that divergent questions and elaboration of children's play activities was least frequently used than telling and instructing. This was also observed in the study. The overall high percentage of closed questions although lower than the 60% reported by Parker and Hurry (2007), is of concern despite the importance of engaging children with questions. The high percentage of closed questions used in the observed practices supports Jones (1990) cited in Tu and Hsiao (2008) viewpoint that teachers do not ask questions effectively. There is an imperative need for open questions as they support children's curiosity and observation, help in problem solving and encourage sharing of thoughts (Branscombe, Castle, Dorsey, Surbeck and Taylor, 2000).

In this study, the higher percentage of guidance and low percentage of facilitative type of teacher-child verbal interactions (for example using describing, giving verbal feedback, recalling and suggesting) found corresponds with Kontos and Dunn's (1993)

study which reported guidance to be provided over facilitation. For example, teachers spent long periods of time using telling and instructing to go through information, procedures and expectations for activities. Divergent questions and elaborations of activities (for example through open questioning and suggesting) were hardly incorporated (Kontos and Dunn, 1993). The dialogue used when co-constructing meaning, (as mentioned by Whitebread, 2003) which is supportive responsive interaction that is necessary to extend children's curiosity and learning was lacking in about 85% of the observed practices. What then might be the underlying reasons for teachers' inaptitude or inertia?

Katz (1995) pondered over this same issue and wondered if it was a question of ability or willingness of teachers to practise what they believe. Nevertheless, it is understood that differences among individual teachers would have contributed to the range in the indicator levels. However, there is still a need to pin down specific factors or influences which the data has uncovered.

5.2.1 Factors that shape practice

General education and professional specialised training

Firstly, teachers' ability to translate the terminology which describes interaction into action is debatable. As mentioned in the findings the observed verbal behaviour of 75% of teachers' did not match their thoughts about how they had interacted during the lesson. It was also mentioned in Table 4.4 (p. 89), that all the teachers except one, did not receive comprehensive training on how to interact with children. Child care teacher Gee's account on her understanding of the meaning of interaction (p. 114), i.e. "to try to

get the correct answers", gave some indication that the teachers did not seem to have the same understanding of the meaning of interactions adopted for this study. Thus translating the concept into practice is riddled with various interpretations. Teacher Gee had a GCE 'O' level for her general education and a DECCET for professional training.

Table 5.1
Comparison of Instructional Interactions between Teacher Mee and Overall Averages
(information from individual report and Figure 15, p. 121)

Instructional Interaction Indicators	Teacher Mee (%)	Averages of Kindergarten and Child Care Teachers (%)
Demonstrating	0	0.6
Describing	14	9.9
Giving Verbal Feedback	18	16.8
Questioning-closed questions	29	34.2
Questioning-open questions	10	9.0
Recalling	2	2.4
Suggesting	12	6.5
Telling and Instructing	15	20.6
Total (%)	100	100

Yet other teachers, for example child care teacher Mee did not receive comprehensive training on teacher-child verbal interactions was able to manoeuvre her verbal interactions with children skillfully. A comparison of the percentages between teacher Mee's and the overall averages of instructional interactions for the seven techniques is shown in Table 5.1.

From the table, it can be seen that Mee has performed better than the average of kindergarten and child care teachers in three instructional strategies (describing, giving verbal feedback and suggesting). These techniques (more than the others) enhanced her affective interactions by:

i. supporting children's language and communications,

ii. encouraging children's learning initiatives,

iii. supporting and extending children's ideas and learning during group time, and

iv. acknowledging individual children's accomplishments.

Teacher Mee, is an example of one category of teachers highlighted by Katz (1995), who has the capability and willingness. Teacher Mee (who has a tertiary education and a DECCET) displayed critical reflection which was not observed in many of the teachers on the need to alter teaching approaches. She realised that she needed to use more open questions and less closed questions if she were to conduct her lesson again, even though her percentage of closed question was below the overall average percentages. This finding demonstrates the importance of having a good understanding of the meaning of teacher-child verbal interactions despite not having comprehensive training on the topic.

Teacher Mee with her tertiary general education and through her teaching practice, has provided more evidence to Mashburn and Pianta (2010) study which found that teachers' education has a direct impact on the quality of interactions that children experience in the classroom. Also, researches like Berk's (1985) and Ruopp, Trevers, Glantz and Coden (1979) cited in Kontos and Wilcox-Herzog (2003) have suggested that teachers with a degree are more likely to engage children verbally through the use of suggestions, and the amount of conversations which promote social and cognitive stimulations are related to the teacher's education. There is also a link between weak content of teacher talk and the teachers' underpinning knowledge (Massey, 2004 and Sylva et al., 2004), which according to Arnett (1989) specialised training is linked with an increased demonstration of warmth in interactions. However, Cassidy, Buell, Pugh-Hoese and Russell (1995) made a clearer distinction that specialised training only had

effects on overall quality of the programme and not quality of verbalisations in terms of responsiveness and sensitivity.

In order to make a clearer distinction, a comparison of six teachers with different combinations of general and academic education level and professional specialised training was undertaken to illustrate that education and training have a significant influence on the quality of teacher-child interactions (Table 5.2). A teacher who enters the profession with a full-time tertiary level education of another discipline, followed by an accredited professional specialised training in early childhood care and education for teaching, has comparatively better affective and instructional interactions, better than other teachers with lesser academic entrance qualifications. Comparing the two, teacher Jan entry to the field included a three years full-time early childhood diploma course plus a two years full-time tertiary programme, culminating with a professional Bachelor degree. Teacher Mee on the other hand, had six years of full time tertiary general education and experience in jobs of another field for a number of years before moving into the early childhood field. Although Teacher Mee undertook a part-time professional specialised training in early childhood education of 700 hours over 18 months, she was observed to be superior in her classroom verbal communication with children.

Table 5.2 also shows the comparison of academic and professional specialised training of other teachers, Sally, Rachel and Lee with Jan. From the information gathered, it can be concluded that more years in tertiary education and rigorous full-time professional specialised training do make a difference to teachers' practice and comprehensive coverage of the topic on teacher-child interaction is secondary. The

data below has revealed the influence of tertiary education and rigorous full-time professional specialised training as contributing positively to teacher-child interaction. However, there are also on-going and inconclusive debates (Bowman, 2011; Fuller, 2011; Pianta, 2010) on whether teachers holding bachelor degrees necessarily are more effective in the classrooms. This discussion now turns to the influence of prior experiences.

Table 5.2
Analysis of Instructional Interactions According to General Education Types and Professional Specialised Training
(Teachers with affective interaction indicator scores indicated)
(information from individual reports and Figure 15, p. 121)

Affective interaction indicator scores		0.96	0.93	0.9	0.7	1.0	0.53
Instructional Interaction Indicators Legend K=Kindergarten C= Child Care Centre T= Teacher DPT/L= Diploma in Early Childhood Care and Education-Teaching/Leadership ECE=Early Childhood Education	Av. of K. & C. Teachers * (%)	T Mee (Full-time General degree, part-time DPT 700 hrs.)	T Jan ('O' Level, 3 years full-time DPT/L , 2 years full-time degree in ECE)	T Sally ('O' Level, 3 years full-time DPT/L)	T Rachel ('O' Level, 3 years full-time Diploma in Law, part-time DPT 700 hrs.)	T Wee ('O' Level, 3 years full-time Diploma in Act, part-time DPT 700 hrs.)	T Lee ('O' Level, part-time DPT/L 1200 hrs., part-time 18 months degree in ECE)
Demonstrating	0.6	0	0	0	0	0	0
Describing	9.9	14	4	8	8	5	7
Giving Verbal Feedback	16.8	18	17	25	15	17	4
Questioning-closed questions	34.2	29	42	39	33	38	50
Questioning-open questions	9.0	10	11	5	9	9	2
Recalling	2.4	2	0	2	3	1	1
Suggesting	6.5	12	13	13	9	5	2
Telling and Instructing	20.6	15	13	8	23	25	34

*Pseudonyms

The power of prior experiences

Even though it can be argued that, some form of indirect and implicit coverage of specific skills in training does benefit some teachers; there are many other factors that

affect teachers' classroom verbal behaviour. For example, while Teacher Mee had positive experiences as a child in school, as mentioned previously but other teachers' anecdotes showed that there were also negative experiences which include traditional seating arrangements and teaching pedagogy. Thus, teachers need to have formal training to know the 'what is and how to' of teacher-child interactions; without which, they tend to draw from their own prior experiences as a child in the early childhood setting to manage their daily verbal encounters. These past positive and negative experiences make up the second factor that shapes practices. Consciously or unconsciously, teachers' actions (as described in pp. 116 and 117) and perceptions are reconstruction of memories of prior experiences (Phillip, 1995). Significant studies by Lortie (1975) and Goodman (1988), reiterated that a person's prior experiences serve as a screen to filter out new learning or select what is to be incorporated into or thrown out from ones current schema. Hence, while training should be acknowledged as vital, training programmes developers need to examine deeper, how to prevent the filtering out effect of prior experiences; imbue critical thinking, critical reflections and mind-set change.

The third factor that shapes practice, classroom characteristics is presented in the following paragraphs.

Classroom characteristics

Ninety per cent of the teachers with the Type 1A classroom which had *'an abundant supply of learning materials, resources and activities, within the reach of children to use during small group learning sessions'* had scores above 0.6 (good to

very good) on the affective interactions indicators (Table 4.2, p.87 and Table 5.3, p. 142). Teacher-talk for these 90% was not above 55% of total teacher-child talk. Eighty per cent of this group had a good spread of instructional interaction techniques used, with the exception of demonstrating. There were also indications of higher usage of the *'more desirable techniques'* and lower usage of the *'less desirable techniques'*.

Although all seven instructional interaction techniques are important, the proportion of their usages is dependent on the physical and material environment that accompanies the planned lessons. For the purpose of this study, it was assumed that the teachers had the power to decide on how they would like to structure and change the details of their classroom environments. These changes were in accordance with their response to observations of the abilities, interest and needs of the children.

Table 5.3
Analysis of Instructional Interactions According to Classrooms Characteristic (Type 1A)
(Teachers with affective interaction indicator scores above 0.6)
(information extracted from individual report and Figure 15, p. 121)

Instructional Interaction Indicators K=Kindergarten C=Child Care Centre T=Teachers (pseudonym)	AV. of K. & C. T. %	T. Wee	T. Mee	T. Sally	T. Eddy	T. Ash	T. Mary	T. Millie	T. M'ria	T. Lisa	T Hu
Demonstrating	0.6	0	0	0	0	0	0	0	0	0	0
Describing	9.9	5	14	8	9	4	15	6	18	14	4
Giving Verbal Feedback	16.8	17	18	25	24	23	29	23	22	12	26
Questioning CQ	34.2	38	29	39	43	28	24	35	26	36	34
Questioning OQ	9.0	9	10	5	13	9	11	9	10	13	7
Recalling	2.4	1	2	2	2	7	0	5	7	3	1
Suggesting	6.5	5	12	13	2	9	7	11	13	8	5
Telling and Instructing	20.6	25	15	8	7	20	14	11	4	14	23

(A) Teachers from Type 1A classrooms

Child care teachers Wee and Mee were from the same school and they used the same classroom space for their lessons. Both scored above 0.95 for affective interactions using different combinations of instructional interaction techniques.

In contrast, while kindergarten teacher Jess' classroom was of Type 1A, and she had included all seven instructional interaction techniques (refer to Table 4.14 p. 100 and Table 5.4) her affective interaction score was low, at 0.54. This reinforced the influence of factors other than classroom physical set up and material availability on teachers' verbal behaviour in the classroom. For Jess, it was her personal early childhood experience which was highly disciplined with structured experiences. Coincidentally, the nature of her beliefs and goals were in agreement with her school's goals and philosophy, i.e. *"to prepare children for formal education"* as mentioned on page 86 (section 4.1.1).

(B) Teachers from Type 1C classrooms

On further examination, although child care teachers Jan and Vel, were both in a Type 1C classroom environment, where *'there was minimal supply of learning materials, resources and activities, and the space available if any was unattractive for small group learning session',* both teachers had affective interaction indicator scores above 0.8 and teacher Vel's instructional interaction techniques usage was favourable in comparison with all the average scores. This is contrary to the belief that when the environment is poorly endowed, teachers tend to instruct and direct children to activities in order to keep them occupied and to stop inappropriate behaviour (Burts, Hart, Charlesworth,

Table 5.4

Analysis of Affective and Instructional Interactions According to Classrooms Characteristic

(Type 1A, 1B & 1C)

(Teachers with affective interaction indicator scores from 0.2 to 1.0) (information extracted from individual report and Figure 15, p. 127)

Instructional Interaction Indicators T=Teachers * Pseudonym	AV.%	T. Wee	T. Mee	T. Sally	T. Eddy	T Ash	T. Mary	T Millie	T Maria	T Hu	T. Lisa	T. Jess	T Susan	T. Ling	T. Bee	T. Del	T. Loo	T.Rachel	T Lee	T. Hee	T. Ang	T. Jan	T. Vel	T Dawn	T. Ju	T. Ruth	T. Katie	T. Ranie	T. Gee	T Eve	T Anna
Demonstrating	0.6	0	0	0	0	0	0	0	0	0	0	3	0	1	3	0	0	0	0	2	1	0	1	1	0	2	0.6	0	1	2	0
Describing	9.9	5	14	8	9	4	15	6	18	4	14	5	9	3	7	8	1	8	7	13	19	4	11	5	10	18	26	22	5	9	14
Giving Verbal Feedback	16.8	17	18	25	24	23	29	23	22	26	12	20	16	21	9	22	17	15	4	15	3	17	26	22	11	8	9	3	17	13	13
Questioning CQ	34.2	38	29	39	43	28	24	35	26	34	36	33	37	36	28	34	41	33	50	41	20	42	32	28	38	37	27	30	36	33	39
Questioning OQ	9.0	9	10	5	13	9	11	9	10	7	13	8	11	5	11	19	7	9	2	8	4	11	5	7	6	13	8	5	0	13	22
Recalling	2.4	1	2	2	2	7	0	5	7	1	3	0	5	5	2	1	1	3	1	1	3	0	2	1	2	2	6	0	1	1	3
Suggesting	6.5	5	12	13	2	9	7	11	13	5	8	6	6	3	2	5	10	9	2	9	1	13	8	9	2	6	0.6	0	1	13	2
Telling and Instructing	20.6	25	15	8	7	20	14	11	4	23	14	25	16	26	38	11	23	23	34	11	49	13	15	27	31	14	23	40	39	16	7
Environment Types		*1A*	*1A*	*1A*	*1A*	*1A*	*1A*	*1A*	*1A*	*1A*	*1A*	*1A*	*1B*	*1B*	*1B*	*1B*	*1B*	*1B*	*1B*	*1B*	*1B*	*1C*	*1C*	*1C*	*1C*	*1C*	*1C*	*1C*	*1C*	*2*	*2*
Curriculum Model		3	3	2	2	3	1	3	3	3	2	1	3	4	1	4	2	2	2	1	4	3	3	1	1	1	2	1	3	2	2
			√				√		√		√																				

Legend	Environment Types		Affective Interaction Scores		Curriculum Model		√
	1A	Rich material well defined LC	>8	Very good	1	Curr set by the school	Teacher above the av. % in the use of describing, verbal feedback, open questions and suggesting techniques.
	1B	Av material, adequately defined LC	>6 to 8	Good	2	Teacher could modify	
	1C	Poor material, minimally defined LC	>4 to 6	Minimal	3	Meet children's needs	
	2	Sparse large rm, separate activity rm	>2 to 4	Inadequate	4	Autonomy	

Fleege, Mosley and Thomasson, 1992). This is only possible with the influence of several other interweaving factors to explain teachers' practices. Teacher Vel's 15 years of teaching experience would have given her more practical strategies to deal with the rather 'Spartan' condition of the classroom. On the other hand, teacher Jan's three years of full-time polytechnic diploma in early childhood education and another two years of full-time degree programme in the same discipline had equipped her with more effective pedagogy. Furthermore, teacher Jan similar to kindergarten teacher Anna, is a highly articulate communicator.

Besides classroom characteristics, the manner in which daily lessons are delivered (learning formats) and the provision of play also explained interaction practices.

Learning formats and play

The learning formats – interactive teaching session and teacher-led session types, (described on pp. 92/93 and 95/96, in Table 4.10 and indicated in Table 4.14, p. 100) seem to relate to teachers' verbal behaviour. Interactive group discussions with small groups or individual activities, games and play allowed children and teachers to engage in two-way verbal exchanges, with the use of a variety of instructional interaction techniques and affective interactions. On the other hand, teacher-led large group sessions in comparison, provided fewer opportunities for engaging teachers and children in conversations. The catalyst for teacher-child talk takes place during an engaging play where the teacher is a play partner. The physical and material environment act to support and allow for play to occur. Only teachers Mee, Wee and

Sally incorporated play into the main lessons and participated as partners in children's play. Therefore, even with the ten Type 1A classrooms observed, physical and material environment alone is not a definitive condition for small group learning through play to happen as Kohn (1992) wrote that there are other challenges posed to teachers for small group learning. Some of these requirements are management of learning process and personal commitment and the need to constantly re-examine the classroom organisation. These requirements are time consuming and could thus be a deterrent for the teachers.

While learning format and play influenced teacher-child talk, curriculum ownership also affects interactions.

Model of curriculum planning and management

When greater autonomy was given to the teachers, the better the results of the teacher-child talk (Table 4.15, p. 102 and Table 5.4, p. 144). While curriculum that was set by the school ensured better control by the school leadership, it did not appear to allow the provision of a rich atmosphere for conversations, as the ownership of the lesson was not in the teachers' hands. The teachers appeared to 'deliver' the lessons and ensured that all lesson plans were covered. This was observed in the lessons of child care teachers Ranie, Ruth, Hee and Ju and kindergarten teacher Jess. However, autonomy could also be a double-edged sword if teachers are restricted by their own personal beliefs that might be deemed inappropriate for children. In the case of kindergarten teacher Ang, her anecdotes on pages 118 and 120, showed that she believed in preparing children for the next level. This belief together with her teaching

experience in a formal secondary school system resulted in her creating a highly disciplined atmosphere for the children. However, teacher Ling who worked in the same pre-school as teacher Ang, used the autonomous situation to provide interactive and developmentally appropriate activities. Teacher Ling also had very different personal experience as a child, in comparison to teacher Ang as documented. So the question still remains, what makes one teacher different from another?

5.2.2 The 'extraordinary teacher' factor

While it is found (on pp. 131 to 134) that rigour in education and training play a key role in quality teacher-child interactions, teachers from the same education and training institution appear different in their affective and instructional interactions.

Table 5.5
Analysis of Affective and Instructional Interactions
According to a Common General Education and Professional Specialised Training
i.e. 'O' Levels plus 3-years full-time course in
Early Childhood Care and Education-Teaching & Leadership
(information extracted from individual report and Figure 15, p. 121)

Affective Interaction Indicators Scores		0.9	0.75	0.53	0.51
Instructional Interaction Indicators T= Teacher (pseudonyms)	Av. of Kindergarten & Child Care . Teachers (%)	T Sally (1.5 yrs.)	T Del (0.5 yrs.)	T Ju (2.5 yrs.)	T Hee (2 yrs.)
Demonstrating	0.6	0	0	0	2
Describing	9.9	8	8	10	13
Giving Verbal Feedback	16.8	25	22	11	15
Questioning-closed questions	34.2	39	34	38	41
Questioning-open questions	9.0	5	19	6	8
Recalling	2.4	2	1	2	1
Suggesting	6.5	13	5	2	9
Telling and Instructing	20.6	8	11	31	11
Classroom Environment Types		1A	1B	1C	1B
Curriculum Models		*Teacher can modify*	*Teacher has Autonomy*	*Set by the School*	

In Table 5.5, the four teachers from the same training institution displayed variations in affective and instructional interactions competencies. It appears that their ability to exercise greater autonomy in the classroom has some influence. However, teacher Sally is different from the four others teachers.

Apart from the observations of teaching, teacher Sally had a teaching style not apparent from her lesson plan. This was a style which Katz (1996) referred to as being related to beliefs (as mentioned in page 18), was not observed in the other 3 teachers. The 'extraordinary teacher' factor, i.e. a playful demeanour which enhanced her ability to execute lessons in a manner that all the criteria for affective interactions were evident in her engagement with the children. This 'extraordinary teacher' factor is what Perkins, Jay and Tishman (1993) cited in Katz (1995) defined as dispositions, i.e. one's "tendencies to put their capabilities into action" (p. 55). However, in reality many good teachers are individually different in many ways.

Individual differences of teachers

Some teachers were more articulate in the English Language, the medium of formal instruction in the Singapore early childhood settings. Second-language lessons are taught in the mother-tongue, either Mandarin, Malay or Tamil. The teachers' profile (on pp. 90-92) showed that majority of the teachers did not come from a mono-language (English speaking) background (Table 4.5B, p. 91). Only six out of the 30 teachers spoke English at home and ten spoke another language and English was not used at home. Lim and Torr (2008) argued that the communicative approach to learning English among pre-schoolers in Singapore was being questioned because of the lack of

environments for opportunities “to hear and use English outside the school context” (p. 96). This condition could also be true for the teachers in this study as the participants observed have varying communicative competencies. From the information gathered through the transcriptions (see p. 115 for example) teachers frequently used short versions of sentences when giving verbal feedback and some teachers were more fluent in the English language than others (see also p. 119).

Individual differences were also apparent in their beliefs about how children learn in comparison to observed practices. Collated data showed that teachers named in their self-reports, 15 different developmentally appropriate roles, which they took on towards children (as listed on p. 93). However, observations showed that their actions were mostly linked to that of ‘*educator and informer’*. From the findings, about 24 out of 30 teachers displayed practices which are similar to teacher Kim’s (in the Berthelsen, et al. 2011 study carried out in Singapore) beliefs about how children learn through absorption and recall. Teacher Kim believed that to learn, children would “pay attention… absorb… what you are teaching” (p. 39). This view is similar to Webb’s (2009) view that teachers have strong influence over the discourse and verbal behaviour in the classroom, which contradicts the definition of interactions defined on page 7 and the views of Goodfellow (1996). However, I would not attribute this inertia to attitude as Karavas-Doukas (1996) mentioned, but to the lack of good role models and time in the classroom.

The teachers were individually different too in their reflective practices. From the teachers’ self-evaluation (using guided reflective questions) at the end of their teaching session, very few thought about what had happened in the classroom, what they did

with children, what they said to the children and how they responded to the children's questions or the lack of it. Critical reflection which Kugelmass and Ross-Bernstein (2000) and Tu and Hsiao (2008) felt was an essential part of practice did not happen naturally with most teachers during the data collection period.

Teachers' classroom practices were also influenced by a larger socio-cultural context in which they have grown up and working in.

5.2.3 Societal factors that affect beliefs and practices

As in Berthelsen et al. (2011), in a previous study in Singapore, it was found that the teachers felt that their *"role in teaching [was] to scaffold children's learning"* (p. 28). In the self-reports of this study, scaffolding was quoted six times and also mentioned in the interviews. Berthelsen et al. (2011) wrote that the teachers had child-centered beliefs but had practices which were geared towards meeting the expectations of the parents of the children in the setting. In this study, parents being a challenge to practice were mentioned by 13 out of the 30 teachers. Other teachers felt that they had supportive parents but there was a need to continually inform parents about how their children were performing in school. Parents in Singapore are also putting pressure on schools because of the values upheld in the society such as meritocracy.

Singapore is a meritocratic society and this social system is also assumed in education (Tan, Gopinathan, and Ho, 1997). Competition in society trickles down even to early childhood settings. Most parents place high emphasis on the academic successes of their children from a very young age. This functionalist approach to education (Berthelsen et al. 2011) places substantial pressure on early childhood

educators in the classroom. This occurs to the extent that some schools accede to the demands of parents at the expense of developmentally appropriate practices as well as the set of curriculum guidelines of MOE which are child-centred in approach (Lim and Torr, 2008). Singapore is similar to other Asian countries such as Hong Kong, Taiwan and South Korea, where teacher-centred approach is embraced. A qualitative study of nine kindergartens in Hong Kong by Li (2006) found that the schools' practices are far from 'ideal', as teachers had to face Chinese cultural influences and parents' demands for an early academic focus (Li, 2004), which would perhaps not surface as a key barrier if it were not for the meritocratic tendencies of the larger society.

Another explanation for the patterns of interactions is the ethnic and cultural background of the participants. In the study by (Ballard and Clanchy, 1991; Biggs, 1990) and Dobinson (2001), participants of Asian origin, adopted a passive approach to learning unlike that of Reggio Emilia where there is a deliberate attempt to make interactions happen (Edwards, 1998). This information on their overt characteristics serves to help our understanding of how these teachers function. However, yet another factor may be the organisational philosophy.

5.2.4 Organisational philosophy

From direct observations, the goals of teachers are related to how the school operationalises their philosophy, unlike the belief-goal-practice relationship proposed in the research design and processes (p. 57). Although only two teachers felt that their values and beliefs were modified by the expectations of the school (referring to p. 92), direct observations gave the researcher a different perspective. Furthermore with 90%

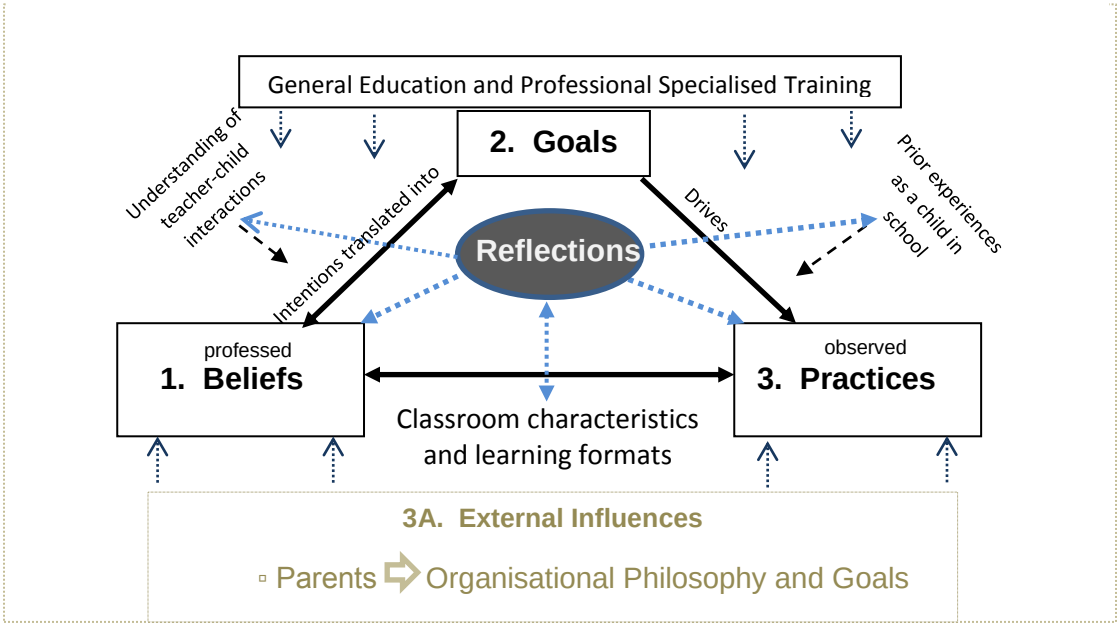
of the teachers having to follow some form of curriculum guidelines (Table 4.7, p. 94), suggests that there were top-down expectations being placed on the teachers, coupled with expectations from parents on the schools which in turn can be channelled down to the teachers. These ultimately affected teachers' initial beliefs and their verbal behaviours in the classrooms. The observations are similar to Galton's et al., (1999) where participation of children were reduced in order to cover content of the national curriculum.

5.3 Theoretical framework revisited

The discussion in the preceding sections have shown that practices are shaped by intertwining factors resulting in a dynamic rather than an 'arranged' belief-practice/action relationship presented in Figure 2 p. 47.

Figure 16

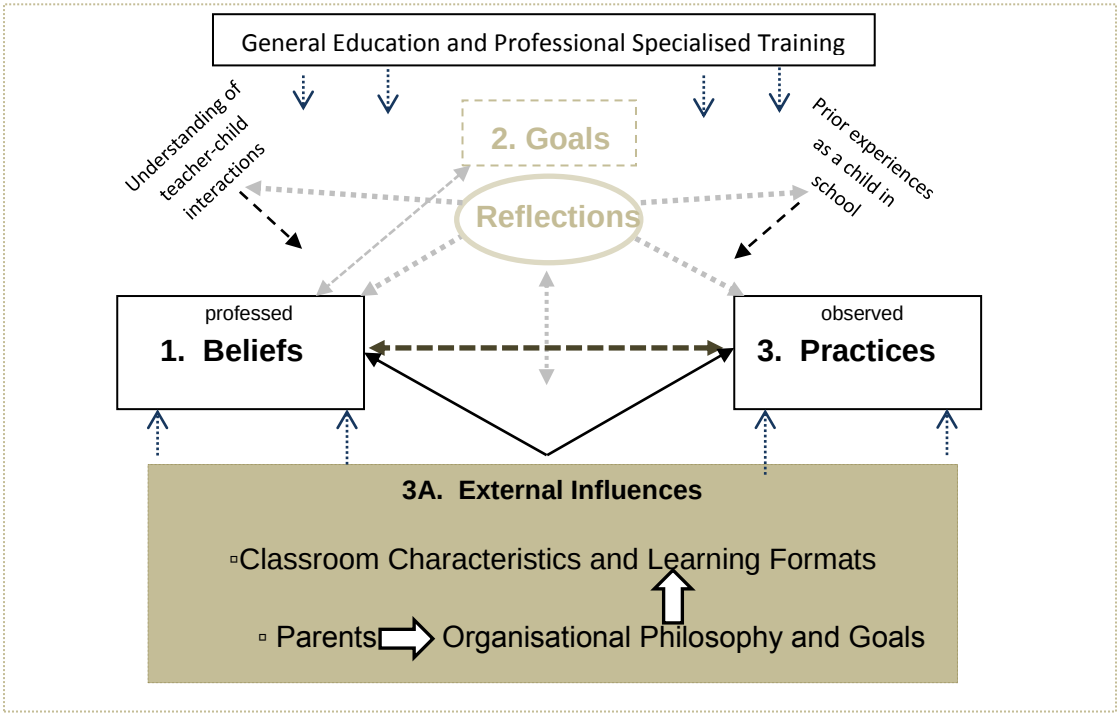
Modified Framework of Belief – Practice/Action Relationship (I)



Where the gap between beliefs and practices of affective interactions is small, typically seen in teachers with very good scores greater than 0.8 (referring to Table 4.14, p.100) and a more favourable combination of instructional interactions, the integration of the various constructs and relationship can be represented differently as shown in Figure 16. However, where the gap between beliefs and practices is large and the affective interaction scores of teachers are 0.6 and less, Figure 17 would give a more representative relationship of the constructs. Among these teachers, reflective practice is mostly absent and organizational goals have a direct influence on teachers' classroom practices.

Figure 17

Modified Framework of Belief – Practice/Action Relationship (II)



5.4 Strengths of the study

This study unveiled the processes involved in the classrooms studied, which is significant to support my better understanding of classroom practices. The outcomes of this qualitative research could be questioned from different perspectives, but in my view the important point is that purely quantitative research could produce a significant amount of data, but the soul of the classroom would then largely be absent. The multiple-case study with multiple sources of data has provided rich and valuable information that one source or form would not suffice. For example, direct observations yielded insights into the verbal delivery of lessons, teachers' responses and the lack of variety in types of verbal interaction. Direct on-site contact with contexts allowed the researcher to gain better understanding of each programme and glean more accurate information from the primary source. Lesson plans from participants alone did not give evidence of the thinking-talking on-the-feet moments of the teachers, even though the teachers could have included a series of questions that she could use at different stages of the lessons.

When the data and its analysis were shared with individual participants for their validation, it provided them with fresh insights they did not realise before. The openness of the sharing with individuals, built a sense of trust that the research was to help them in their practice and to build a community of learners.

5.5 Challenges and limitations of the study

The study also has its own challenges and limitations. Firstly, the use of a convenience sample provided a basis for bias to arise. It brought about the question of

why one sample was chosen over another. Familiarity with the participants also posed as a problem as there was the fear of causing embarrassment to arise when it was necessary to probe further during direct contact in interviews. The perceptions of the researcher and impressions made about the context and participants could have created partisanship and influenced the evaluation of the study if without careful validation by participants themselves.

Secondly, the one-time direct observation was a snapshot of the daily practice. Kindergarten teacher Susan, as she validated the descriptions, thought that one observation alone would not be representative enough as it did not capture the other days which she felt her interactions with the children were more spontaneous.

Thirdly, the subjects of observations knew that they were watched did not behave naturally all the time. Teacher Dawn thought that she would have taught the lesson better without the researcher's presence. Teacher Rachel asked at the end of the interview how she had performed in her teaching. In overt observations it would be difficult to ensure that human factors such as fear and pride do not influence the quality of the data.

Next, the lack of experience in thinking on one's feet to draw out critical information from the participants during the interview posed as a barrier to the analysis portion of the study. Contrary to Patton's (1990) beliefs that staying objective is still possible, staying objective was difficult when observing practices or re-examining of data up closed, uncovered my beliefs about equity and justice to children. Thus constant reminder of staying on track with the objectives of the study in mind had to be

a constant thought for me as I worked through my study. The implications of the study outweigh the challenges encountered and endurance required.

5.6 Implications for policy, teacher education and professional development

A gradual move towards new entrants with tertiary education should be encouraged as higher levels of general education appears to be more influential than higher levels of professional specialised training. The former produces teachers who are better in their teacher-child verbal interactions, which is a key determinant of quality care and education. Besides this specific area of teaching skills, studies with focus on child learning outcomes have found better educated teachers more adaptive to new advances in professional development and change and are also better thinkers (Barnett, 2011; Bowman, 2011). They cited that teachers with Bachelor level of education have better language competency and the understanding of concepts that affect children's learning and development, as well as the ability to draw from other disciplines to strengthen the early childhood curriculum. In Singapore, the current situation as mentioned by Chen (2011) could have been the result of very low academic qualifications of entrants into teaching in early childhood education in the past 30 years. Thus there is an urgent need to re-examine the minimum academic entry requirements of early childhood educators.

A more comprehensive training, with requirement for higher language competencies and practical coverage of interaction techniques and strategies such as wait time for children to talk, might be one way forward. The current curriculum guidelines for teacher education are strong in teaching teachers to be grounded in

learning domains; however, the process in which these learning domains are delivered needs to be addressed more explicitly. As shown in the ORACLE study, by Pellegrini and Blatchford (2000) teachers need to learn how to listen to children and let them talk. That is the 'software' of teaching. The hardware, which includes planning of lessons, managing the class and working with leaders in the setting, is well covered but this software of teaching is missing (Ayer, 2001).

Training in effective communication has to go beyond the current offering in the professional specialised training of 'what is and why it is necessary to communicate effectively'. The effective communication course has to encompass the techniques which MacNaugthon and Williams (2009) had devoted an entire textbook for instructions for teachers.

Next, at the school level, there is the need for monitoring, coaching and engaging teachers in critical reflection on action. Pianta (2011) emphasises continuous but small doses of guidance and shaping of teachers' lesson delivery in their current classroom to be a more effective way to better interactions. The case study by Wood and Bennett (2000) attests to the power of in-depth reflection in changing the practices of teachers. The findings in this study showed that most teachers in the post-teaching guided reflections, only gave cursory statements that were superficial including one-word response. Critical reflection related to the teachers' view of their roles in the classroom and the skills needed for reflection is worth exploring. However, the roles perceived and mentioned on page 92 by the participants, could have been a one-way performer of duties but not as a reflective practitioner. While early childhood training courses do include reflection writing, the skills of writing reflection is often not innate and the

process of how to reflect and how to write reflective notes needs to be taken a step further. Teachers need to listen to themselves and engage in pedagogical discourse with fellow professionals. They have to be given time for these, rather than to be piled with work.

The meritocratic culture of Singapore has also unwittingly brought about 'paper chase' and the perception among teachers that additional certification is better than less. Furthermore, if additional information is loaded onto an already weak foundation of domain knowledge and teaching pedagogy, the overall number of tertiary qualification of early childhood educators could be lifted but classroom practices may not improve in tandem. Thus classroom practices need to be strengthened as suggested by Pianta (2011), a mentoring system to build strong foundations before new information can be assimilated meaningfully. Fuller (2011) also highlighted that the Bachelor degree holders showed no difference in terms of classroom practices because of 'strong-on-the-job teacher mentoring".

5.6 Summary

In concluding, there are gaps between teachers' professed beliefs in affective and instructional interactions and their observed practices; higher percentages of closed questioning and telling and instructing techniques used; higher percentages of teacher-talk compared to child-talk.

The teachers' affective and instructional interactions in the classroom are related to their individual dispositions and language competency. The level and types of general education have a greater influence than professional specialised training in

early childhood education, whether at a Diploma or Bachelor level. In addition, more years in tertiary education, combined with more rigour in professional specialised training from full-time courses, do make a difference to the teachers' classroom practices. The level of general education also potentially affects the teachers' overall understanding of concepts and terminologies and even the need for reflective practice. The numbers of years of teaching experience do not seem to have an influence on the teachers' affective interactions. However, experience does provide an advantage when the classroom environment is poorly set up with little resources. In contrast, the teachers' prior experiences as children in early childhood settings have an impact on their beliefs and behaviour.

Classrooms that are well resourced, learning formats with greater emphasis on play, models of planning and curriculum management that allow for greater autonomy of teachers also have some impact on affective and instructional interactions. Concurrently, the teachers' extraordinary factor and language competency do have an overall influence. However, despite all the above mentioned, the meritocratic achievement oriented nature of the Singapore society is exhibited through parents' demands and the school's leadership expectations on teachers, have a negative effect on teachers' beliefs and practices.

In conclusion, teacher education has to go beyond standardised professional specialised training and increasing the hours of classroom instructions. Systematic and individualised professional development programmes with emphasis on coaching and critical reflective practice should be the key focus for effective teacher education.

CHAPTER 6

CONCLUSION

6 Introduction

This study was carried out in response to the rising interest in classroom discourse. The over-arching questions were, “What is the nature of teachers’ verbal interactions in relation to their beliefs?” What are the reasons for their practices?”

As a teacher educator, interest in the on-going improvements of the professional development and training of early childhood educators has been viewed as a necessity to raise the level of quality of practice. The key factor for high quality early childhood programmes lies with skilful educators and this can be measured through teacher-child interactions. Various literature discussed concur that rich, meaningful and intentional teacher-child interactions are necessary for the enhancement of children’s cognitive development and thinking. Furthermore, as children are increasingly spending more time in centre-based care settings, this aspect of quality care and education cannot be over-emphasised. The teacher’s role in classroom discourse is generally believed to be influenced by his/her beliefs about teacher-child interactions.

Literature explored has shown links between the nature of teachers’ interactions with children and their values and beliefs about how children learn. Yet numerous studies have also disagreed with this proposition because in reality the relationship between beliefs and practices is complex.

A series of MOE’s policies, since 1999, such as the desired outcomes for young children, curriculum frameworks and higher requirements in training of educators, were

introduced to improve the quality of early childhood education. Within the MOE's Kindergarten Curriculum Framework, the rationale for teacher-child interaction placed modelling of language as the key role for early educators. Literature discussed however reviewed at least seven other instructional interaction techniques (MacNaughton and William, 2009) and affective interaction criteria (High/Scope Preschool PQA, 2003).

Despite the professional specialised accredited training that early childhood educators have to undertake in Singapore, verbal interactions with children have been noticed to be weak in comparison with the implicit expectations set out in the principles and practices of early childhood care and education of the Kindergarten Curriculum Frame and NAEYC (MOE, 2003; Copple and Bredekamp, 2009).

6.1 The research questions answered

The multiple-case study approach adopted for this study was for the researcher a labyrinth of learning, un-doing and re-doing. While exploring with certainty and patterns of teachers' verbal interaction, there was also constant encounters with uncertainties having to handle the overwhelming variations and factors from the 30 cases. Nevertheless, by charting with the research design illustrated in Figures 3 and 4 (on pp. 51 and 57) and adopting a systematic approach to observations, analysis of data, selective inclusion of information and verification of information with literature, some clear findings emerged (found in Chapter 4 and discussed in Chapter 5). The theoretical framework for belief-practice relationship (Figure 2, p.47) evolved into pragmatic models (as shown in Figures 16 and 17, pp. 152 and 153) more

representative of different group of teacher practices that are influenced by personal, school and societal factors.

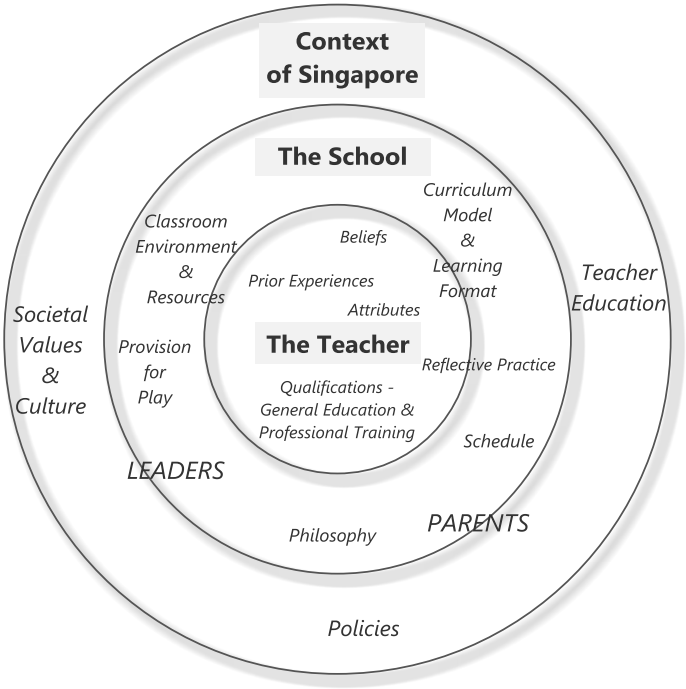
While teachers' professed beliefs about the seven affective and seven instructional interactions were favourable in the study, the observed practices were inconsistent with the former. This weak link is affirmed by other studies in Cassidy and Lawrence (2000), McMullen (1998), Kontos and Dunn (1993) and Peled-Elhanan and Blum-Kulka (2006). In this study, the observed teachers' affective interactions with children were warm, nurturing and positive. This is only one out of the seven affective interaction criteria, one which is expected of teachers' fundamental role in the classroom. However, they displayed dominance of the teacher's voice over that of children's (observed in their instructional interactions) which was indicative of an instructivist approach to classroom interactions, similar to another local study by Berthelsen, Brownlee and Nirmala, (2011).

With the teacher at the centre of everything that happened within the classroom setting, it could be seen that his/her interactions with children were affected by multifaceted influences, as summarised in Figure 18. These influences took place at different levels and layers of encounters, depicted by the concentric diagram.

Firstly, the abilities, skills and thought processes of the teachers were related to, and influenced by their qualifications, training, prior experiences and natural attributes. Secondly, the immediate school and classroom environments and related curriculum issues which were visible to teachers (and they might have the ability to change them), had direct influence on their verbal behaviour. Thirdly, the influences that affected teachers' daily work were related to encounters with significant people, such as parents

and leaders of the respective schools. Lastly, the macro influences of policies had direct implications, while the more subtle societal values and culture such as those related to meritocracy permeated down to the pre-school classroom level unsuspectingly. Each set of influencing factors was also inter-related and thus blurring the boundaries of their influence on the classroom teachers. However, teachers have already been imbued in a meritocratic value system. They seemed to have naturally embraced it in their work with children evident from their verbal interaction patterns that emphasise meeting lessons' objectives as seen in page 98 and the culture of correctness seen in page 125.

Figure 18
Factors that Influence Teacher-child Verbal Interactions



There were however, two important and inter-related factors that explained the belief-practice relationship. They were the general education level of teachers and

reflective practice. This confirmed Wilcox-Herzog and Wards (2004) proposition that education and training have an important role in teachers' beliefs and practices.

How relevant then was the belief-practice relationship to the daily work of teachers? McMullen (1998) and Wilcox-Herzog, Ward and Kontos, (1998) argued that practice shapes and defines beliefs. For the teachers in this study, I believe that some beliefs were implicit in teachers' actions; however, they were not always conscious of these beliefs as shown in the findings on page 116 and 117. With critical reflective practice, teachers may over time be able to develop intuitive knowledge which they mentally and repeatedly reconstruct their observation of their own personal practices and experiences.

6.2 Recommendations

The outcome of this study is not only for teacher educators to deliberate but also for all who support the development of teachers. The recommendations that follow are categorised into three broad areas: teacher education, reflective practice with support from the leadership of schools and entrant qualifications of early childhood educators.

i) In teacher education, training of specific instructional techniques such as asking open questions, demonstrating, describing, giving verbal feedback, recalling and suggesting have to be more visible in the training curriculum. This would enhance the teachers' more frequently used repertoire of techniques of telling and instructing and asking closed questions. The techniques should also be taught using play as a vehicle for learning so that the learning becomes both process and content oriented and it meets the needs for teachers to be partners in children's play. These recommendations

are linked to the findings shown in Figure 15 (p. 127) where there was an over-dependence on two techniques (namely telling and instructing and closed questioning). In section 4.10.5, page 122 it is also noted that where play was provided during lessons, the usage of telling and instructing fell below the average percentage for the technique. Furthermore in section 4.6, page 103 and Figure 11, page 110, it is recorded that the widest gap between beliefs and practice for affective interactions was in criterion (iii) which necessitate teachers to 'participate as partners in children's play'. However, the current model of professional development and training carried out in formal training classrooms where learning is disconnected from real classroom situations has its setbacks (Mashburn and Pianta, 2010). Hence a complimentary model of "on-going practice-focused coaching and feedback" (Pianta, 2011, p. 68) is more definite in bringing about more assured positive outcomes for teachers' classroom interactions. Furthermore, teachers need to see themselves in action and question their own practices. Thus reviewing and analysing personal teaching through video recording would be another approach to adopt and this brings us to the next point on reflective practice.

ii) At the individual teacher's level, habitual engagements in reflective practice should be encouraged and sustained, followed with plans of action for continual self-improvement. This recommendation is linked to the findings shown in section 4.10.10, page 125 and Table 4.18, page 116 where it was found that teachers who were more reflective about their lessons had smaller gaps between their professed beliefs and observed practices for affective

interactions. Besides, several factors that were identified to explain the gap between beliefs and practice of teacher-child verbal interactions could be resolved if teachers were more reflective of their daily on-going teacher-child interactions and negotiate with leaders of the school for better control of the circumstances within their own classrooms. With reference to sections 4.10.3 to 4.10.6 (pages 121 to 123), for example, re-examination of current physical and material environments, schedule and learning formats to support small group learning and play would bring about more favourable affective and instructional interactions between teachers and children. Reflective practice is also necessary for teachers to critically examine if their current practices are related to and affected by less appropriate prior experiences (as found in sections 4.10.1). In the push for reflective practice, the support of school leaders is of utmost importance for sustainability. Teachers need to be given time away from the classroom during their work hours to reflect-on-action and for-action, as discussed in section in 2.3.3, page 45, the crucial factor for translating beliefs to practice.

iii) A gradual move to raise the entrant qualifications of early childhood educators seem to be warranted for better teacher-child interactions. As mentioned on pages 103 and 130, higher levels of general education is seen to have more positive influences on teacher-child talk. Such a change would have to be a top-down initiative, just as MOE had taken the bold step to raise the bar for entrants' qualifications in 2009. However, for lasting impact, change will have to come from the practitioners themselves as well.

The teachers who are working closest with the children should initiate change, by re-examining their own practices through critical reflections and engaging in continual professional development and discourse. Teachers in Singapore have the tendency towards a 'spectator interaction attitude', a term borrowed from Dobinson's (2001). Hence change would take time, slowly but certainly.

6.3 Concluding thoughts

This multiple-case study is the beginning of many future and wider studies across Singapore's early childhood setting. Research that focuses on child-outcome will provide socially and politically-driven evidence which policy makers require, to support change. For this purpose, one future studies can include large randomised surveys across a wider population, with a focused sub-population qualitative studies. As teachers' performances do vary with the presence or absence of reflective practice and the significant people whom they work with, another area for future research should focus on the leaders' role in enhancing the practices of teachers.

In conclusion, the Singapore early childhood landscape is still evolving. Against the cultural backdrop of meritocracy, the Singapore early childhood setting can have its unique features without compromising universally acknowledged principles of quality programmes of NAEYC. Desired teacher-child verbal interactions will have to consider MOE's agenda too which will hopefully be increasingly child-sensitive, and teachers will continue to 'light the fire' for learning in each child's life. With suggested changes to teacher education programme, mentioned earlier, improvements would grow teachers

to become thinkers who provide children with sensitive, stimulating, supportive, responsive, instructive and engaging teacher-child verbal interactions (Pianta, 2011).

Appendix A

Pre-classroom Observation Questionnaire and Reflections Serial # _____

What are your beliefs about how children learn best and the types of interactions in the classroom? Circle ONE NUMBER that best reflects your thinking.
A) Children learn best when they interact with their peers during play. (1) Agree all the time (2) Agree most of the time (3) Agree (4) Agree somewhat (5) Doubtful
B) Children learn best when they are taught by their teachers in a highly disciplined atmosphere. (1) Agree all the time (2) Agree most of the time (3) Agree (4) Agree somewhat (5) Doubtful
C) Children learn best when there are developmentally appropriate verbal interactions with their teachers. (1) Agree all the time (2) Agree most of the time (3) Agree (4) Agree somewhat (5) Doubtful
D) What do you perceive to be your role in children's learning? _____ _____

E) Verbal interactions involve the teacher providing demonstrations accompanied with clear bit-size explanations. (1) I practise it all the time (2) I practise it sometimes (3) I have tried practising it (4) It is difficult to practise it (5) Totally new information to me
F) Verbal interactions involve the teacher describing the characteristics of such things as objects, events or feelings. (1) I practise it all the time (2) I practise it sometimes (3) I have tried practising it (4) It is difficult to practise it (5) Totally new information to me

G) Verbal interactions involve the teacher constantly giving feedback. (1) I practise it all the time (2) I practise it sometimes (3) I have tried practising it (4) It is difficult to practise it (5) Totally new information to me
H) Verbal interactions involve the teacher asking questions. (1) I practise it all the time (2) I practise it sometimes (3) I have tried practising it (4) It is difficult to practise it (5) Totally new information to me
I) Verbal interactions involve the teacher getting children to recall prior experiences, events or interest. (1) I practise it all the time (2) I practise it sometimes (3) I have tried practising it (4) It is difficult to practise it (5) Totally new information to me
J) Verbal interactions involve the teacher suggesting children's participation, through questioning, feedback and giving children time to respond. (1) I practise it all the time (2) I practise it sometimes (3) I have tried practising it (4) It is difficult to practise it (5) Totally new information to me
K) Verbal interactions involve the teacher telling and giving instructions. (1) I practise it all the time (2) I practise it sometimes (3) I have tried practising it (4) It is difficult to practise it (5) Totally new information to me

In the classroom during large or small group situations, what are your beliefs about the following in relation to teacher-child verbal interactions? Tick √ the box below, ONE NUMBER that best reflects your belief.

		Not at all important	Not very important	Fairly important	Very important	Extremely important
i	It is _____ for the teacher to provide a warm and caring atmosphere for children through her interaction with children; she is calm and attentive	1	2	3	4	5
ii	It is _____ for the teacher to use a variety of strategies to encourage and support child language and communication; he/she uses varied questioning technique; he/she is democratic	1	2	3	4	5
iii	Participating as partners in children's play is _____.	1	2	3	4	5
iv	It is _____ to encourage children's learning initiatives throughout by for example suggesting, listening, and commenting.	1	2	3	4	5
v	It is _____ to support and extend children's ideas and learning during large and small group time by listening and observing,	1	2	3	4	5
vi	Acknowledging individual children's accomplishments is _____.	1	2	3	4	5
vii	Encouraging children to interact with & turn to one another for assistance is _____.	1	2	3	4	5

L) Was the lesson / learning plans for children solely decided by you or you had to follow guidelines laid down by the school or other factors had an influence ?

_____

_____

M) What are your goals for the children in your class ?

_____

Do you think the lesson which you intent to carry out will in any way contribute to achieving those goals you have mentioned above? How ?

_____

_____

end of this questionnaire and reflection

Appendix B

Preliminary Data of Participants

Serial #	Email address:			
Pre-school teaching experience: _____ years		Home Language:		
Professional Training (circle one)	1	Diploma in Pre-school Teaching (part-time)		
	2	Diploma in Pre-school Leadership (part-time)		
	3	Diploma in Pre-school Teaching and Leadership (full-time)		
	4	Specialist Diploma in Early Childhood Education (part-time)		
	5	Others :		
Highest level of academic qualification (circle one)	1.	'O' Level		
	2.	'A' Level / Diploma from a Polytechnic		
	3.	Bachelor degree		
	4.	Post graduate		
Number and types of Continuous Professional Development programmes attended in the last one year	Number:	1. 2. 3. 4. 5. >5.		
	Conference	Workshop	Field Trip	Overseas Trip
	Short Courses	Prof. Network	In-house training Prog	Others
Pre-school environment for yourself **when you were a child.** I did not attend pre-school (tick box if applicable). ☐	1. What was your teacher like ? (knowledgeable, loving, warm, caring, strict, etc) _____ _____ 2. How were lessons conducted most of the time in the pre-school you attended ? _____			
What **values** do you uphold that you believe are important for your work with children? (in other words, what is important to you in teaching ?)	_____ _____ _____			
Other working experiences besides being a pre-school educator				

Appendix C

Post-teaching Guided Reflections Serial # _____

1. What are your views/opinion about the lesson that has just taken place ?

   _____

   _____

2. Recall the nature of your verbal-interactions with children as the lesson developed. What were they like?

   _____

   _____

   What do you think of the verbal interactions?

   _____

   _____

   _____

3. If you were to do this lesson all over again what would you do that is different in the area of verbal interactions?

   _____

   _____

   _____

4. Give your reasons for number 3 above.

   _____

   _____

Appendix D

Interview Guide Serial # _____

(The face-to-face formal Interview is conducted after observation of the teacher and upon completion of the Post-teaching Guided Reflections)

1. Do you remember if teacher-child verbal interactions/teaching techniques or how to talk to children was covered in the professional training which you had gone through? Circle one answer

    a. No, not covered
    b. Yes somewhat / a little
    c. Yes a fair amount
    d. Yes comprehensive coverage

    If the answer is YES, state the modules in which this was covered.

    _____

2. What were you trying to achieve through your verbal interaction with the children?

    _____

3. How successful do you think you were with your verbal interactions with the children earlier on during the lessons ? (need to improve, satisfied, better than expected, very good, excellent)

    _____

4. On a scale of **0 to 10** where would you place the teacher's verbal interaction as an important factor in the child's learning? Circle one number.

    0 1 2 3 4 5 6 7 8 9 10

5. What were some of the things which you did earlier on, that were intentional ?

    _____

6. How successful was the planned activity?

    _____

7. What were some of the things which you did earlier on that were unintentional? i.e. you did not plan for them.

_____

8. Why did you do what you had done then?

_____

9. On most days, for your interactions with children in the classroom, were your actions mostly affected by:
   a. your feelings? b. your knowledge? c. your thinking?

   Were there any experiences that had modified/changed your beliefs about how children learn and the role of verbal interactions in their learning ?
   (ask only if the pre-observation questionnaire and reflection is incomplete for this area)

   _____

10. What were your goals for the children in your class? For example, building relationship / preparing children in the area of the 3Rs etc. Key words
    (ask only if the pre-observation questionnaire and reflection is incomplete for this area)

    _____

11. What were some of the obstacles or challenges that you were facing when you carried out your daily lessons?

    _____

    _____

12. Do you think what you had been doing in the classroom was based on developmental theories or practical knowledge?

    _____

Appendix E

Letters to Schools (Sample)

Name of school
Address of school
Singapore

Date

Dear Principal/Supervisor

Subject: **An Exploratory Study on the Beliefs and Practices of Teacher-Child Interactions of Selected Pre-school Teachers**

Introduction
In order to complete the research study for a post-graduate degree, I will be embarking on the above-mentioned. I hope to be able to include your school in a multisite data collection phase for the above-mentioned study. The study will involve a total of 20 pre-schools, with each pre-school inviting 2 English-speaking Diploma trained teachers (who teach 4 and/or 5 years old children). The data collection period is from 16 August to 5 November 2010.

Purpose
The purpose of the study is to explore the relationship between teachers' beliefs about verbal interactions with children and their actual practice and the underlying factors that influence teachers' actions. Better understanding could pave the way for new and innovative training strategies in the future.

Benefits
Pre-school teachers who participate in this study will benefit from the opportunity to learn more about their own beliefs and their practices through the reflective process and sharing, which in itself is a personal professional development strategy.

What does participation involve?

A) The two English speaking Diploma trained teachers of your school will receive through email, with you in the cc loop:
   1. An information letter – giving some information about the study
   2. Consent form – to complete
   3. Reply and Confirmation slip – to complete
   4. Preliminary Data of Participants form – to complete

B) On the Introductory Visit to your school, (proposed date XXX and time XXX) I will brief all parties concerned the purpose and nature of the study; my role and your teachers' involvement. I will also collect 3 items from the teachers: the Consent forms, Reply and Confirmation slip and the Preliminary Data of Participants form. At the same time your teachers will be given a written note of assurance that confidently and integrity will be maintained throughout the study.

C) Two to three days before my observational visit, the teachers have to provide me, via email :
   1. One guided Initial Reflection – the template will be emailed to the teacher to complete
   2. Lesson / learning plans for the day of my observational visit. The format could be one which the teachers use in the school and they are very familiar with.

D) During my Observational Visit to your school, I will be observing the teachers during their large and small group activity sessions. I will be taking field notes and doing audio recording as a backup for critical conversations which I may miss out in the anecdotal recordings. After my observation session, the teachers observed will be invited to write a short guided Post-teaching Reflection, followed with a Face-to-Face Informal Interview. The duration of the observational visit for each teacher will be approximately 2 hours.

Confidentiality
I want to assure you that all data and information collected will be managed confidentially. The name of your school will not be disclosed and each participant will remain anonymous. I will be using serial numbers, abbreviations and pseudonyms for data collection and collation.

Finally
Upon the completion of the study a written summary of the overall findings will be sent to the school. The study will be used for academic research only.

I would appreciate your thoughts about participating in this study. If you and your teachers are ready to participate:
1. please drop me an email to indicate preliminary acceptance;
2. download the 4 attachments for the teachers who have volunteered, to complete;
3. indicate if (date XXX) is suitable for the Introductory Visit to your school.

Thank you for your kind consideration to be part of a learning community.

Yours sincerely

Lucy Quek

Mrs Lucy Chew-Quek
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lucy.quek@durham.ac.uk

Appendix F

Information Sheet

Research Project:

An Exploratory Study on the Beliefs and Practices on Teacher-Child Interactions (of Selected Pre-school Teachers)

Spodek and Saracho (1994) held the view that, teachers are central to all that happens in the classroom. Among the multiple roles a teacher holds, one vital area is their interactions with children, which goes hand in hand with beliefs (Spodek & Saracho, 1994). Furthermore, teachers come to the classroom setting with their existing level of knowledge, beliefs and perceptions all of which are the motivating focus for classroom interaction practices. Using the multisite case studies design, this study seeks to explore the relationship between professed beliefs of teacher-child interactions and practices:- the factors that implicate, influence or determine teachers' actions.

This will be a qualitative research, with the primary concern on the process and meaning of teachers' beliefs and interaction, rather than outcomes. The researcher herself plays a key role in the collection of data as a spectator observer, and the process is also inductive.

Forty teachers of the 4 and 5 years old children will be drawn from 20 pre-schools (kindergartens and childcare centres); two from each setting. The pre-schools will comprise of community-based, religious organisation affiliated and privately operated schools. Convenient sample of preschools and teachers will be invited through e-mail and telephone calls to participate in the study and the purpose and significance of the study will be communicated. Upon acceptance of invitation, visits to each pre-school to brief the leaders and participating teachers about the study will be made. In addition, the researcher's task and roles and the nature of the teachers' involvements will be shared. A written condition and guarantee will be given to participants to assure confidentiality, to communicate the nature of the study and the opportunities for participants' feedback.

****

Appendix G

CONSENT FORM

TITLE OF PROJECT:
An Exploratory Study on the Beliefs and Practices of Teacher-Child Interactions of Selected Pre-school Teachers

Before completing this Consent Form, please read carefully the details in the accompanying information letter. Also do note that audio recorded will be used for collection of data.

Please cross out as necessary

1. Have you read the Participant Information Sheet? …… YES / NO
2. Have you had an opportunity to ask questions and to discuss the study?... YES / NO
3. Have you received satisfactory answers to all of your questions? ……. YES / NO
4. Have you received enough information about the study? …… YES / NO
5. Who have you spoken to? Mrs.Lucy Chew-Quek ? …….. YES/NO
6. Do you consent to participate in the study? …… YES/NO
7. Do you understand that you are free to withdraw from the study:
   - at any time and
   - without having to give a reason for withdrawing and
   - without affecting your position in the school ?..... YES / NO
8. Have you been informed that audio recordings will be used for the study? YES / NO
9. Do you consent to the use of audio recordings? …….. YES / NO

Signed .....……..... **Date** .....

(NAME IN BLOCK LETTERS) .....…….....

Approved by Durham University's Ethics Advisory Committee

NOTE:
The tape recordings of participants will be used as a backup copy in addition to anecdotal recording. It will not be used for any other purposes at the end of the project.

Appendix H

Reply and confirmation slip to take part in:

An Exploratory Study on the Beliefs and Practices of Teacher-Child Interactions of Selected Pre-school Teachers

To : Mrs Lucy Chew-Quek

☐ I will be participating in the above mentioned study

☐ I have read the accompanying letter

☐ I will not be participating in the above mentioned study

Signed .....……..... **Date ……..**

_____
(Name in Block Letters)

Appendix I

Assurance to Participants (Sample)

To Whom It May Concern

Title of research project:

An Exploratory Study on the Beliefs and Practices of
Teacher-Child Interactions of Selected Pre-school Teachers

Participants in this research are automatically anonymous to the reader. As the study touches the heart of daily practices of participating teachers within the setting, I am aware that information collected can turn out to be sensitive issues. Extreme care and objectivity will be exercised in analysing the information and in managing them ethically and professionally. The study is to add-value to the community and field and not to cause distress or hurt to the participants.

Lucy Chew – Quek
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Appendix J

Affective Interaction Guide

Supporting Evidences/Anecdotes Responses of the teacher during large or small group situations

i. Warm and caring atmosphere for children		
Level 1 Indicators	Level 3 Indicators	Level 5 indicators
1. Teachers do not show positive attention in their interactions with children.	1. Teachers sometimes show positive attention in their interactions with children or show positive attention to some children.	1. Teachers show positive attention in their interactions with children (eg. smile, hug, nod, use a calm voice, make eye contact, get down to child's level, and listen attentively).
2. Teachers use shouting, shaming, or harsh words or actions (yelling, shaking, grabbing).	2. Sometimes teachers interact with children in calm and respectful tones.	2. Teachers interact with children in calm and respectful tones.
3. Adults do not attend to children who are upset.	3. Teachers sometimes attend to children who are upset.	3. Teachers attend to children who are upset.
4. Children do not go to teachers when they are upset.	4. Children sometimes go to teachers when they are upset.	4. Children go to adults for help, comfort and guidance.
5. Children do not call teachers by name.	5. Children sometimes call adults by name.	5. Children call teachers by name (eg. Ms…)

ii. Use a variety of strategies to encourage and support children's language. and communication		
Level 1 Indicators	Level 3 Indicators	Level 5 indicators
1. Teachers control or disrupt conversations with children(eg. lecture or quiz children, interrupt, talk over, dominate, redirect topic).	1. Teachers sometimes share control of conversations with children.	1. Teachers share control of conversations with children (eg. let children initiate conversations, take turns, wait patiently for children to form thoughts without interrupting).
2. Teaches ignore children when they talk; teachers give directives.	2. Teachers sometimes converse with children in a give-and –take manner.	2. Teachers converse with children in a give-and-take manner. They make comments, observations, acknowledgements, and seek children's ideas.
3. Teachers ask children many questions, especially closed-ended or leading questions with predetermined correct answers (eg. "What colour is this circle?")	3. Teachers ask a moderate number of questions; questions are both closed-ended and open-ended.	3. Teachers ask children questions sparingly; questions are open-ended (ie. To discover child's ideas and thought process); questions relate directly to what the child is doing.

iii. Participate as partners in children's play		
Level 1 Indicators	Level 3 Indicators	Level 5 indicators
1. Teachers do not participate in children's play.	1. Teachers sometimes participate in children's play.	1. Teachers participate as partners in children's play
2. Teachers are not partners in children's play.	2. Teachers use some strategies as partners in children's play.	2. Teachers use a variety of strategies as partners in children's play: observe and listen before and after entering children's play; assume roles as suggested by children; follow the children's cue about the content and direction of play; imitate children.

iv. Encourage children's learning initiatives		
Level 1 Indicator	Level 3 Indicator	Level 5 indicator
Teachers do not encourage children's initiatives.	Teachers sometimes encourage children's initiatives in age-appropriate ways.	Teachers encourage children's ideas, suggestions and efforts throughout by: listening to children; encourage children to talk about what they are doing; trying out and imitating children's ideas; using children's words' commenting specifically on children's work.

v. Support and extend children's ideas and learning during group time		
Level 1 Indicators	Level 3 Indicators	Level 5 indicators
1. Teachers do not support or extend children's small-group activities.	1. Teachers use some strategies to support or extend children's small-group activities (eg. after materials are given to children, teachers help when needed).	1. Teachers use many strategies to support and extend children's small group activities (eg. they observe what children do, move from child to child, comment on what children are doing and saying, imitate and add to children's actions, use the materials themselves).
2. Teachers do not support or extend children's large-group ideas and actions.	2. Teachers sometimes use some strategies to support children's large-group ideas and actions.	2. Teachers use many strategies to support and extend children's large-group ideas and actions, eg. watch and listen to children; imitate children's actions; use children's words; assume children's physical level; let children be leaders; follow up children's suggestions and modifications.

vi. Acknowledge individual children's accomplishments through encouragement		
Level 1 Indicator	Level 3 Indicator	Level 5 indicator
Teachers praise and reward children's accomplishments and give tangible rewards; do not give encouragement to acknowledge children's efforts and ideas.	Teachers sometimes praise and sometimes give tangible rewards and sometimes use encouragement to acknowledge children's efforts and ideas.	Teachers use encouragement to acknowledge individual children's efforts and ideas (eg. repeating children's ideas, commenting on what children are doing, putting children in control of evaluating their own work and efforts).

vii. Encourage children to interact with & turn to one another for assistance		
Level 1 Indicators	Level 3 Indicators	Level 5 indicators
Teachers do not encourage children to interact with one another	Teachers sometimes encourage children to interact with one another.	Teachers regularly encourage children to interact with one another in ways appropriate to their developmental levels.
Teachers actively discourage such interactions (eg. telling children to do their work, not to talk to one another during meals or story time).	Teachers sometimes urge children to play cooperatively (eg. making rules about sharing or taking turn s; telling children to cooperate or be friends).	Teachers find many opportunities to refer children to one another; teachers look for and support children's spontaneous cooperative efforts.

Appendix K

Individual Case Record-example	
KT3 Observation	
Date: 14 Sept 2010	Time: 8:15am to 9:15am
Level: K 1	Age: 4 and 5 years old
Setting: An enclosed sharing room 5 by 2.5 meters without tables and chairs. The floor space was sufficient for 18 children to sit in a large circle. The wall space was plain. There was a white board for placing charts and for writing. A low table for materials was available.	
Curriculum area: Science	Activity: Whole group lesson - recalling topic on sea creatures. The teacher used a chart, a feely bag of plastic models of sea creature and real fish. Small group activities in a separate learning area - playing dominos and sorting sea shells at the table.

Anecdotes

The lesson started with recalling the topic on sea creatures. One by one the children were called to the picture chart, to look at the picture of a coral reef. By using closed and open questions, and suggestions each child was asked to name the sea creature that they knew. For a child who was very quiet, the teacher gave prompts by describing the distinct feature of the sea creature to help the child to identify and name the creature from the chart. The teacher described, *" it looks different, it is not a fish.. something that has a lot of arms… eight arms"* (lines 37 to 39). The children's contributions were immediately shared with the other children in the class. Feedbacks was given immediately when the children gave the correct answers.

When the children were getting noisy, the teacher used closed questions, telling and instructing technique to get the children to think about their classroom rules.

The Fish Song was played for the children to sing along and the teacher suggested that everyone take part by singing and moving. Using open questions the children were asked how fish swim, *"How do fish swim in the water… how do you swim in the water?".* The children were also asked to move their hands like the fins of the fish. With closed questions that had an 'either or' option, the children were asked the difference between themselves and the fish. The teacher then described the colour of the fish.

Before the game was played the teacher used the telling and instructing (lines 73 to 91) technique to reinforce and remind Jun Kai of the classroom rules. With the same technique, the feely bag of plastic sea creatures was introduced and the rules and procedures of the game were told. The feely bag was passed and the teacher suggested that each child to pick a sea creature without looking into the bag. When all the children had picked an item the teacher suggested that they hide the creature from view in order to surprise their friends (line 95). The teacher demonstrated how to play the game by sharing her description of the item that she had. Each child was encouraged to describe the features (colour, tail and fins) of the plastic sea creature models apart from just naming them (line 101). From lines 104 to 213, the teacher used a combination of open and closed questions, describing, giving verbal feedback and suggesting to guide each child's sharing. Examples of open questions were, *"Tell us what you have got/ found"… "Can you tell us something about ….. ?"…. " why is it called the hammerhead shark?" " do you see anything special about your fish?".. "what is the difference".. "what else is different".. " can you tell me which part is not the same?"..*

Whenever the children could did not respond to the open question, the teacher would switch to closed questions to help the child focus on a particular aspect of the sea creature. For example, *"can you tell us about eel"* (open question) followed with, *"is it long or short?"* (closed question); *"Can you tell me which part is not the same?"* (open question) followed with (closed question), " *What colour is your fish?"* Examples of giving verbal feedback were, *"its called the… wow you know a lot about sea creatures".. "thank you, very good.. you know a lot about the sea creatures".*

Examples of suggesting were, *"tell us something about the eyes…", "let Trumen tell us something about*

his fish first.. this is something different"….. "we are going to look at the sea creature again. So we will put all these sea creatures at the discovery corner".

When each child had described the sea creature, it was returned to the feely bag. The teacher (line 129) pointed out to the similarity and difference between hers and a child's sea creatures, using the closed question, *"Do you think these two fish are the same?".* The teacher also pointed to the special feature of each creature. When the discussion came to the hammerhead shark, the teacher gave verbal feedback that she learnt something new (line 161). When it was Alexia's turn to speak, the teacher helped her by asking specific and closed questions, such as *"Look at mine.. look at yours.. is it the same.. can you tell me which part is not the same?".*

Ashley was keeping very quiet and when the teacher asked (an open question), "Can you tell us about your seahorse?" she did not give an answer (line 179). Another child in the class, said, "She don't even know!" (line 180). The teacher asked her closed probing questions such as, *"Do you like the seahorse?,…Do they swim?.. Do they hop?…Have you seen a real seahorse before?"*.. to invite answers. Ashley gave the answers with a soft voice.

The children were told that they will be looking at all the sea creature again and the teacher moved on to explain the parts of the fish. The teacher used a picture of a fish with its parts labeled and she described (line 223) the functions of the parts. By recalling the information as to why humans cannot live in water, she described the gill cover and the position of the gills. The teacher used an open question (line 225), *"why.. fishes and sea creatures able to live in water?"* again to recall previously covered information.

Before a real fish were taken out to inspect, the teacher used telling and instructing (line 229) to remind the children of the rule, 'to sit down' so that all the children would be able to view the fish. In response to a child's question as to the reason for her wearing gloves, the teacher replied with an open question, *"What do you think?"* (line 233). A child was quick to respond that the gloves help to keep her hands clean. The teacher went on to give verbal feedback that she will be holding their hands later on (line 235).

The teacher continued with the lesson, describing the features of the fish as she pointed to the different parts, such as the head, fin, scales, skin and lips. She also described the colour, smell and texture. Closed questions (lines 240 to 248) were also used to seek responses for the name of parts of the fish and its colour. Open questions (line 244, 248 and 253) such *as 'Tell me what is different?'... 'Do you think fish have teeth?'...'How can the magnifying glass help you to see?'* The children were informed that the three fish would be placed at the discovery corner with a magnifying glass.

The children prepared to move to another area for activities after their visit to the toilet. The teacher used the telling and instructing technique (lines 265 to 275) to get the children to move to another area of the school. Twelve children were divided into 2 groups for table activities. The group which accompanied Ms. Yee played dominos while the other group was given shells to sort.

Each child had a place to sit at the table. The rule of the game was told and described (line 278). The teacher demonstrated and played the game together with the children. The teacher asked a series of closed questions (lines 288 to 344), such as, *'What comes after?'... 'What is this picture?" 'What must you find?'…'Would you like to put this side?'…'Do you have a ..?' … 'What must (child's name) look for?' …'Do you have any picture to match?'…'Now whose turn is it?'…'Do you have a double?'…'Who has (# cards) left?'… 'Who has the least card?'* to guide the children through the game. After four rounds the children knew the rules of the game. They began to draw the cards and place them correctly and could tell whether their card was a double. The teacher checked to find out if the child who missed a turn was correct about their decision. Ten minutes into the game the status of each player at the game was checked to find out who had the most and the least cards left. Feedback and suggestions were sparingly given.

The teacher suggested to play with the same set of cards in a different manner. The children had to draw each card from the pile and place each face up on the table. None of the children held on to the cards.

The same rules for playing dominoes were applied. Joel was placed in charge with Jenkins next to him. However, the game was cut short because time was up and the children had to move to a waiting mobile heritage bus that visited the school

The following inferences are only applicable to the above observational context, together with the voice recording transcripts. They are not exhaustive and do not imply that under different circumstances the teacher would also be interacting in the same manner with children

Inferences on affective interactions

i. Warm and caring atmosphere for children

The teacher showed positive attention in her interactions with the children. There were smiles and eye contact. She listened attentively, except for lines 253 to 255. In this instance when the children responded to the teacher's question on how the magnifying glass can help them, she did not acknowledge their responses. On all other occasions the children received attention.

The voice of the teacher was calm even when a couple of boys were constantly fidgeting. She reminded them of the class rules and firmly stopped the mischievous behavior. (lines 56, 71, 73, 86, 100, 170, 206, 229, 236 and 257)

To a child who sounded rude in his reply, *'What are you talking about, all fishes have tails?'* the teacher was equally calm in her feedback to him, *'Yes, of course, all fish have tails right'.* (lines 102and 103). The children were also heard addressing the teacher by her name.

(Level indicator 5)

In this area, the observed practice of the teacher was slightly above her professed belief. In her pre-classroom observation reflection, she wrote that *'children will learn better if we encourage them to discover'.* This shows that she had a clear idea about her role and had provided a suitable human atmosphere for it to happen. In her post-teaching reflections, the teacher mentioned that sitting on the floor with the children created a more relax atmosphere for the face-to-face interactions. However, in terms of the physical environment, there were some limitations because the set up for the discovery was in another area and not at the place where the discussion took place. Another limitation was the size of the group and children had to wait for a while for their turn. The teacher realised that there was some waiting during the sharing of information using the models of sea creatures.

ii. Use a variety of strategies to encourage and support child language and communication

A variety of strategies were used:

a) Closed questions 72% of total questioning technique
b) Open questions 28% of total questioning technique
c) Questioning 46% of total techniques

Other key strategies used were:

a) Giving verbal feedback 14%
b) Suggesting 13%
c) Telling and instructing 17%

As this was a recall lesson, the children were generally well versed with the knowledge of sea creatures and the teacher had taken the opportunity to let children share information. Although there was a good amount of open questions, in terms of its percentage of total questions it was less than half. Besides questioning, other strategies that support language and communication were used, but a lower percentage was recorded. (Level indicator 3)

The teacher was aware of the different levels of participative nature of the children. The more vocal children were dominating the session while a few slow to warm up and quieter children were too shy to speak up. The teacher however, was sensitive to the needs of all children and she gave equal attention to all.

iii. Participate as partners in children's play

The teacher participated in children's play during the small group activity time for one group of children.

However, it was a structured play involving a game. The strategy was used generally to get the children to play the game correctly, with a strong learning objective of identifying and matching the sea creatures. The rule of the game had to be followed closely, otherwise the game would be meaningless. Although the teacher was seen as a play partner in the domino game, she was using mostly closed questions to guide children through the game. The other group of children was left on their own most of the time. (Level 4 indicator)

The small group activity supports the teacher's pre-classroom observation thoughts that children should learn together with peers.

iv. Encourage children's learning initiatives
The teacher listened intently to children's contribution and did not over power them. She gave feedback immediately when children contributed to the sharing session. The quieter and slower to respond children were prompted. Suitable materials for the sharing time were provided and every child had a piece. In lines 117 and 161 the teacher gave positive responses when the child shared information that surprised her. She understood that learning can be co-constructed. (Level indicator 5)

v. Support and extend children's ideas and learning during group time
The teacher used appropriate materials for large and small group sessions to support learning based on topic 'Sea Creatures'. Children were called by their names to participate and every child had a turn. Children's answers and new information were openly shared with the whole class. During the small group session, as the teacher was focused on guiding the children to play the game according to the rules, she took on the role of a leader. The other group of children were left on their own as perhaps they were more familiar with the task. (Level indicator 4)

vi. Acknowledge individual children's accomplishments
The teacher gave suitable feedback, as a way of acknowledging children's accomplishments, such as in lines 51 and 119. However, much of the feedback given was not complete (for example, lines 335 and 347). Comments such as, yes, ok, wow, thank you and yea were given to encourage children's contributions. The teacher's enthusiastic voice was another indicator that she was acknowledging children's contributions. (Level indicator 4)
In the teacher's post-teaching reflection, she displayed awareness of need to use more encouragement and praise. Perhaps the teacher was unaware that feedback is a way of giving encouragement and praise is not encouraged.

vii. Encourage children to interact with & turn to one another for assistance
On numerous occasions when a child contributed an idea, the teacher would call out the child's name. This was a way for the teacher to modeling the need to accept each and everyone in the group. The small group activity required children to play together amicably, following the rules of the game. (Level indicator 5)

Summary of affective interactions
The teacher's professed beliefs and the observed practices are congruent except for a slight difference in one criterion. She was a warm and caring teacher and provided a variety of strategies (whole group sharing using picture talk, plastic models and real materials; small group activity using games and sorting materials). Both sets of materials were related to the topic for the session. The teacher was in close proximity with children during play and sat at the activity table to guide children and ensured that they knew how to apply the rules of the game. She had put thoughts into learning in a social environment.

The classroom environment was designed to separate whole group and small group sessions, perhaps with considerations for reducing noise level. This is a good design idea. Perhaps more could be done to the wall and ceiling space in the discussion room to create the mood for the topic.

I agree with the teachers' reflection that the children waited too long during the large group sharing. Discussions of such nature could be done in smaller groups. In this way, children who need more time to warm up and speak confidently could be given a fair chance.

Legend

Not at all important	1
Not very important	2
Fairly important	3
Very important	4
Extremely important	5

Affective Interaction indicators (professed beliefs vs observed practices)	KT3	KT3
i. Warm and caring atmosphere for children	4	5
ii. Use a variety of strategies to encourage and support children's language and communication	4	3
iii. Participate as partners in children's play	4	4
iv. Encourage children's learning initiatives	4	5
v. Support and extend children's ideas and learning during group time	4	4
vi. Acknowledge individual children's accomplishments	4	4
vii. Encourage children to interact with & turn to one another for assistance	4	5
	28	30
	1.07	

Inferences on instructional interactions :

a) Demonstrating
This was observed during the following occasions:
1st - when the teacher wanted to show her plastic model of a fish to the children (line 101).
2nd – when she was explaining how the domino game was to be played (lines 278 to 284).
3rd – when she was explaining how to play the 'draw and place' card game (line 349).

b) Describing
The teacher used this technique to explain the features of various sea creatures in great detail to children. The other area where descriptions were used was when she explained how the games were to be played (line 236. 278, 281 and 349). These were descriptions related to facts about the sea creatures, instructions and procedures of the games as well as her personal impressions of the information. The latter can be spotted in lines 23 and 68).

c) Giving Verbal Feedback
The teacher gave verbal feedback for the following purposes:
1st – To inform children of how to sit so that they would have a better view of the pictures (line 9).
2nd- Generous acknowledgement of children's contributions in the sharing session.
3rd – to inform the child that his behavior affects other children as well as the teacher (lines 71 and 79).

There was a tendency for the teacher to give only half the verbal feedback sentence.

d) Questioning
Open question 28% of all questions asked. However, it was observed that the more vocal children were able to give responses more spontaneously (lines 132, 142, 153, 162, 174, 201, 111, 225, 233,

244 and 253). However, most replies were just one word answers and a few of them were in full sentences.

Closed question 72% of all questions asked. They were used mostly to seek if children could give an answer to previously taught information. There was a series of closed questions asked in a logical order, one at a time, during the domino game. This was done to guide children in the game.

There were instances where the teacher had to switch to closed questions when the children did not give an answer to her open questions. For example, *"can you tell us about eel"* (open question) followed with, *"is it long or short?"* (closed question); *"Can you tell me which part is not the same?"* (open question) followed with (closed question), " *What colour is your fish?"* At times the switch between the 2 types of questioning technique was too fast. Children would take a while to think and give a response to thinking questions.

e) Recalling

The whole session was a recall on the topic, sea creatures. As for the use of the recalling teaching technique it was used only 3 times. Lines 10, 223 and 226. In recalling, the teacher used closed and open questions.

f) Suggesting

A fair amount of 'suggesting technique' was used. The suggestions given, had different purposes:
1st to enable the children to think of or use other possible strategies. For example, the teacher opened up possibilities for children to share not only using the poster on sea creature that they see in front of them, but they could just share from past experiences, such as in lines 16, 66 and 293.
2nd to help children position themselves in ways that they would have a better view such as in line 34,
3rd to cultivate a sharing spirit among the children, as in line 42, 'let others have a chance'. Also in lines 51 and 155,
4th to get children do something, but unlike telling and instructing, 'suggesting' does not have the directive tone. Lines 58, 76, 95, 104, 108, 112, 129 and 145.

g) Telling and Instructing

17% of total teaching techniques were devoted to telling and instructing. This was done to get children in order so that the lesson can begin promptly; inform the children of what the teacher would be doing next; reiterating classroom rules and the teacher's expectations; to get started with the game and to follow the rules of the games; inform children of hygiene expectations.

Summary of instructional interactions

All seven techniques were used with the highest percentage in questioning and specifically closed questions. Recalling and demonstrating were the least used techniques. The teacher used a fair amount of suggesting, giving verbal feedback and open questions. This shows that the teacher is making an attempt to give the children a bigger voice in the classroom. The teacher was also closely involved with the children by positioning herself in close proximity to the children.

Suggestions on how the teacher can improve include needing to work on the recalling technique and reduce the use of closed questions. The time given for children to think and articulate has to be longer. Given the large group size, it would be difficult for children to wait till everyone had a turn. The teacher had reflected on this short-coming, in her post-teaching reflections.

Legend	
I practise it at all time	1
I practise it sometimes	2
I have tried practising it	3
It is difficult to practise it	4
Totally new information to me	5

Instructional Interaction Indicators (professed beliefs vs observed practices)	KT3	KT3
Demonstrating	2	2
Describing	2	9
Giving Verbal Feedback	2	13
Questioning CQ	1	33
Questioning OQ	1	13
Recalling	1	1
Suggesting	1	13
Telling and Instructing	2	16
		100

Overall summary

The teacher's professed values were applied in her practice. Her affective interaction practices match her beliefs. From the instructional interaction the teacher attempts to be more child-centered than being teacher-directed. She had also tried to use child-referenced interactions. She is a reflective teacher. As shown in her post-teaching reflection, her thoughts about the lesson match the analysis of the lesson done by the researcher. In the interview, the teacher also articulated that her perception about interactions had changed as children are different now when compared to the past. Previously her belief was one of *"directed and disciplinary type"* and children had *"to listen to learn"* but now she has *"to listen to them"*. However there is still a pressing need to 'feed information' as shown in her thoughts that, *" I provided enough information on the topic*". On the other hand, the teacher also felt that she does not have all the information and answers and she is still learning. This is shown in line 119, 161 and 262 where the teacher said that, *"I am learning a lot"…"this is another new thing I learn"… " I am going to find out more about that"* (whether the killer whale belongs to the dolphin family).

As rightly mentioned by the teacher, if the group size is smaller, the quieter children would have more opportunity to speak and the waiting time reduced. This would be possible if the class schedule is altered.

In order for the teacher to translate her beliefs about how children learn and her roles in their learning, she would have to consider how the physical and temporal environment could allow children to (as mentioned by the teacher) *"discover things on their own instead of telling them facts and figures" … "support the children's natural yearning for learning"…"be given time to explore, experiment and mess up things during their learning process"*. As the teacher had control over planning and there is support from the leaders of the school and parents of children in the school, her role in making changes is much easier.

Notes:
Affective interactions ((Adapted from High/Scope Preschool Program Quality Assessment (PQA) 2003)
Supporting Evidences/Anecdotes Responses of the teacher during large or small group situations

i. Warm and caring atmosphere for children		
Level 1 Indicators	Level 3 Indicators	Level 5 indicators
6. Teachers do not show positive attention in their interactions with children.	6. Teachers sometimes show positive attention in their interactions with children or show positive attention to some children.	6. Teachers show positive attention in their interactions with children (eg. smile, hug, nod, use a calm voice, make eye contact, get down to child's level, and listen attentively).
7. Teachers use shouting, shaming, or harsh words or actions (yelling, shaking, grabbing).	7. Sometimes teachers interact with children in calm and respectful tones.	7. Teachers interact with children in calm and respectful tones.
8. Teachers do not attend to children who are upset.	8. Teachers sometimes attend to children who are upset.	8. Teachers attend to children who are upset.
9. Children do not go to teachers when they are upset.	9. Children sometimes go to teachers when they are upset.	9. Children go to teachers for help, comfort and guidance.
10. Children do not call teachers by name.	10. Children sometimes call adults by name.	10. Children call teachers by name (eg. Ms…)
iii. Use a variety of strategies to encourage and support children's language. and communication		
Level 1 Indicators	Level 3 Indicators	Level 5 indicators
4. Teachers control or disrupt conversations with children(eg. lecture or quiz children, interrupt, talk over, dominate, redirect topic).	4. Teachers sometimes share control of conversations with children.	4. Teachers share control of conversations with children (eg. let children initiate conversations, take turns, initiate conversations, take turns, wait patiently for children to form thoughts without interrupting).
5. Teaches ignore children when they talk; teachers give directives.	5. Teachers sometimes converse with children in a give-and –take manner.	5. Teachers converse with children in a give-and-take manner. They make comments, observations, acknowledgements, and seek children's ideas.
6. Teachers ask children many questions, especially closed-ended or leading questions with predetermined correct answers (eg. "What colour is this circle?")	6. Teachers ask a moderate number of questions; questions are both closed-ended and open-ended.	6. Teachers ask children questions sparingly; questions are open-ended (ie. To discover child's ideas and thought process); questions relate directly to what the child is doing.
iii. Participate as partners in children's play		
Level 1 Indicators	Level 3 Indicators	Level 5 indicators
3. Teachers do not participate in children's play.	3. Teachers sometimes participate as partners in children's play.	3. Teachers participate as partners in children's play
4. Teachers are not partners in children's play.	4. Teachers use some strategies as partners in children's play.	4. Teachers use a variety of strategies as partners in children's play: observe and listen before and after entering children's play; assume roles as suggested by children; follow the children's cue about the content and direction of play; imitate children.

iv. Encourage children's learning initiatives		
Level 1 Indicator	Level 3 Indicator	Level 5 indicator
Teachers do not encourage children's initiatives.	Teachers sometimes encourage children's initiatives in age-appropriate ways.	Teachers encourage children's ideas, suggestions and efforts throughout by: listening to children; encouraging children to talk about what they are doing; trying out and imitating children's ideas; using children's words, commenting specifically on children's work.
v. Support and extend children's ideas and learning during group time		
Level 1 Indicators	Level 3 Indicators	Level 5 indicators
3. Teachers do not support or extend children's small-group activities.	3. Teachers use some strategies to support or extend children's small-group activities (eg. after materials are given to children, teachers help when needed).	3. Teachers use many strategies to support and extend children's small group activities (eg. they observe what children do, move from child to child, comment on what children are doing and saying, imitate and add to children's actions, use the materials themselves).
4. Teachers do not support or extend children's large-group ideas and actions.	4. Teachers sometimes use some strategies to support children's large-group ideas and actions.	4. Teachers use many strategies to support and extend children's large-group ideas and actions, eg. watch and listen to children; imitate children's actions; use children's words; assume children's physical level; let children be leaders; follow up children's suggestions and modifications.
vi. Acknowledge individual children's accomplishments through encouragement		
Level 1 Indicator	Level 3 Indicator	Level 5 indicator
Teachers praise and reward children's accomplishments and give tangible rewards; do not give encouragement to acknowledge children's efforts and ideas.	Teachers sometimes praise and sometimes give tangible rewards and sometimes use encouragement to acknowledge children's efforts and ideas.	Teachers use encouragement to acknowledge individual children's efforts and ideas (eg. repeating children's ideas, commenting on what children are doing, putting children in control of evaluating their own work and efforts).
vii. Encourage children to interact with & turn to one another for assistance		
Level 1 Indicators	Level 3 Indicators	Level 5 indicators
Teachers do not encourage children to interact with one another	Teachers sometimes encourage children to interact with one another.	Teachers regularly encourage children to interact with one another in ways appropriate to their developmental levels.
Teachers actively discourage such interactions (eg. telling children to do their own work, not to talk to one another during meals or story time).	Teachers sometimes urge children to play cooperatively (eg. making rules about sharing or taking turns; telling children to cooperate or be friends).	Teachers find many opportunities to refer children to one another; teachers look for and support children's spontaneous cooperative efforts.

Descriptions of instructional verbal interactions (adapted from MacNaugthon and Williams, 2009)

h) Demonstrating-shows how, with unambiguous small steps
i) Describing – words to paint a picture of the characteristics of objects, events or feelings
j) Giving verbal feedback – objective information about tasks given before, during, and after.
k) Questioning – Open – to recall thinking, feelings or beliefs
   i. Close – to recall facts and experiences
   ii. Logical order, one at a time
   iii. Testing
l) Recalling – elicit memories of recent experiences, familiar events, areas of interest
m) Suggesting- open-ended questioning and verbal feedback that are positive, directly or indirectly phrased, given one at a time, allowing time for children to respond
n) Telling and Instructing- Telling – passing information
   Instructing – giving steps to achieve outcomes

Appendix L

Letter Seeking Member Check (Sample)

Dear _____ ,

You are invited to review the report in the attachment. The anecdotes came from direct observations and voice recordings. The inferences and overall summary contains information from direct observations, self-reports, reflections and face-to-face interview.

Please go through the report and give me your feedback. You are welcome to comment, refute and explain if necessary.

Should I not receive a reply within 5 days from the date of this email, I will believe that you have no objections to the information mentioned in the report.

Please be assured that this report is only for you and is not shared with anyone else who is in a position to evaluate your performance.

Thank you and regards

LUCY CHEW-QUEK

Appendix M

Protocol Excerpt

A. Preliminary meeting with individual teachers who have agreed to participate

9:30 am Arrive at the school and seek permission to meet the participant.
Meet the participant in the school's discussion room.
Walk through with the participant the information sheet which lays out the purpose and scope of the research project and the rationale for the topic.
Explain in greater detail and invite questions from the participant.
Ask the teacher if he/she feels comfortable to be included in the research project.

9:40 am Explain the details of the researcher's involvement, i.e. what the researcher will be doing during the observational visit.
1) The length of my presence
2)The field notes that I will be taking
3)The use of a voice recorder. Clarify that I will be recording objectively and the information collected will focus on aspects of teacher-child verbal interactions.

The participant's role is explained as well. The participant does not have to prepare any special lessons as the observation is to focused on a normal daily lesson that involves large and small group teaching time on the teacher's schedule. The participant may introduce me to the children as a visitor and I will sit in an obscure position in the classroom.

9:50 am The participant is invited to ask questions. After questions are answered, the participant is informed of confidentiality matters and is invited to read and complete the Consent Form (Appendix X) and the Reply and Confirmation Slip (Appendix X). If the participant is comfortable to take part in the research project, he/she completes the forms. The two forms are collected and a letter reassuring the participant of confidentiality is given.

10:00 am The participant is invited to complete the Preliminary Data form (Appendix X). The participant's personal contact number is collected. The arrangement for the observational visit is finalised. The participant is informed to email his/her learning plan two days before the observational visit. The participant is shown a copy of the Pre-observation Questionnaire and Reflections form (Appendix X). The form will be emailed to the participant 2 days before the observational visit and will be collected on the day of the observational visit. The participant will be shown the Post-teaching Guided Reflection form that the participant has to complete after the lesson. The participant will be informed of an informal interview after he/she has completed the Post-Teaching Reflection.

B. Observational visit

9:15 am	Arrive at the school 15 minutes before the appointed time of the observational visit. Prepare the necessary stationeries. Prepare the voice recorder for the participant to wear around his/her neck.
9:30 am	Begin the observation once the lesson starts with children for about 30 to 45 minutes. Type directly into the Anecdotal Observation template.
10:15 am	When the lesson is over meet the participant in a quiet place where he/she completes the Post-Teaching Reflection at his/her own pace.
10:20 am	Collect the Post-teaching Guided Reflection and have a 'chat' using the Interview Guide (Appendix X). At the end of the chat, ask the participant if the researcher could contact him/her if the researcher needs any clarification on the information collected. Inform the participant the voice recording transcript and anecdotal records will be emailed to him/her, and he/she can advise the researcher if there is any incorrect information.

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